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UNIVERSITY OF ILLINOIS BULLETIN

ISSUED WEEKLY

Vol. XX **March 19, 1923** **No. 29**

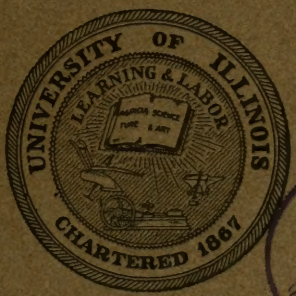
[Entered as second-class matter December 11, 1912, at the post office at Urbana, Illinois, under the Act of August 24, 1912. Acceptance for mailing at the special rate of postage provided for in section 1103, Act of October 3, 1917, authorized July 31, 1918.]

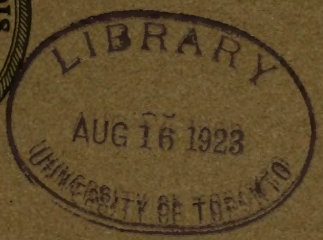
UNIVERSITY OF ILLINOIS

Issued From The

HIGH SCHOOL VISITOR'S OFFICE

PROCEEDINGS OF THE HIGH SCHOOL CONFERENCE OF NOVEMBER 23, 24 and 25, 1922





PUBLISHED BY THE UNIVERSITY OF ILLINOIS
URBANA

THE 1923 CONFERENCE WILL BE NOVEMBER 22, 23 and 24

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Edited and Compiled by the
High School Visitor

PUBLISHED BY THE UNIVERSITY OF ILLINOIS
URBANA
1923

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CONFERENCE COMMITTEES

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Biology Section:	Clarence Bonnell, Harrisburg, 1925, Chairman; George W. Hunter, Galesburg, 1924; Alice J. Patterson, Normal, 1923.
Classics Section:	Effie Case, 1924, La Grange, Chairman; Fay Miller, Belleville, 1925, Secretary.
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English Section:	H. De F. Widger, Charleston, 1925, Chairman; Bertha Smith, Oak Park, 1924; Hazel E. Koch, Rockford, 1924; Florence Crocker, La Salle, 1923; Nancy Lawry, Alton, 1923; Essie Chamberlain, 1923; Catherine Himes, 1925.
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High School Library Section:	Mary S. King, Kenilworth, 1925, Chairman; Wilma Ponder, Maywood, 1923; Rachel Baldwin, Highland Park, 1923; Clara Hadley, Decatur, 1924; Ruth Sankee, Urbana, 1924, Secretary.

Home Economics Section:	Anna Belle Robinson, University, 1923, Chairman; Ruth A. Wardall, University, 1923; Ethel Rose, Bement, 1924; Olla Johnson, Bloomington, 1924; Ruth Bancroft, Bement, 1925; Miss Peterson, Peoria, 1925.
Manual Arts Section:	H. C. Ruckmick, Le Roy, 1923, Chairman; John H. Sharda, West Frankfort, 1925; Arthur J. Mays, University, 1925; Mrs. Nellie Wall, Riverside, 1925, Secretary.
Mathematics Section:	L. E. Mensencamp, Freeport, 1923, Chairman; E. W. Schreiber, Maywood, 1924; Marie Wilson, Quincy, 1925.
Modern Language Section:	Josephine T. Allin, Chicago, 1924, Chairman; Blenda Olson, Macomb, 1925; John D. FitzGerald, University, 1923.
Music Section:	Mary Dodds Phillips, University, 1925, Chairman; Ella Sargent, Anna, 1925; E. B. Brockett, Joliet, 1924; Lucile Ross, Bloomington, 1925, Secretary.
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Social Science Section:	M. L. Flaningam, Urbana, 1923, Chairman; U. S. Parker, Quincy, 1924; Ralph H. Bush, Joliet, 1923; Anna L. Hull, Decatur, 1924; Laura F. Ullrick, Kenilworth, 1925; J. E. Randall, University, 1925, Secretary.

STATISTICS OF HIGH SCHOOL CONFERENCE 1921-22

	1921	*1922*
Total attendance	2700	3279
Total registration exclusive of University	2555	3003
No. Public High Schools represented	518	528
No. representatives of Colleges and Academies	136	118
No. representatives of Normal Schools	29	30
No. county superintendents	16	17
No. representatives of Book Houses, etc.	33	40
No. of High School Teachers whose expenses were paid in full	527	562
No. of High School Teachers whose expenses were paid in part	635	630
No. of High Schools represented by delegates whose expenses were paid in full or in part	319	318
Following is the registration by sections:		
Administration	386	494
Agriculture	73	127
Biology	115	154
Classics	183	208
Commerce	168	179
County Superintendents and Village Principals	92	61
English	418	621
Geography	25	32
High School Library	...	28
Home Economics	228	257
Manual Arts	106	113
Mathematics	270	281
Modern Language	82	152
Music	70	92
Physical Education	48	63
Physical Science	100	173
Social Science	224	230
Unclassified	...	14

SOME GENERAL CONSIDERATIONS CONCERNING THE CONFERENCE

In some ways the 1922 Conference surpassed those preceding, not only in the number attending, but also in the character of work accomplished. In the estimation of many the work of the Principals' Association was superior to that of any previous session. The material presented represents a real contribution on several vital problems of high-school administration.

The report of the committee on objectives seems to express the most advanced stage yet reached by any study of that most interesting and far-reaching problem. This report furnishes an excellent criterion for testing the validity and weight of the subject-matter of any department of high-school instruction.

The new section for High-School Librarians fully justified itself. It is undertaking a good work which should receive the hearty cooperation of teachers and principals.

Other sections whose programs seem to be especially noteworthy are those of English, Classics, Manual Arts, and Biology. The section of County Superintendents and Village Principals also presented what appears to have been the strongest program in its history. The papers by J. Calvin Hanna, and County Superintendent Boyes, of Galesburg, are contributions of value.

The idea of a Conference of Superintendents with the College of Education for the same week seems to have met with general favor. It was on account of this organization that the section of County Superintendents and Village Principals voted to discontinue. It is hoped that this Conference of Superintendents, organized on a high plane of professional interests, may become a permanent feature of Conference week.

There is one weakness of our Conference which might be greatly remedied by cooperation between section committees, on the one hand, and principals and departmental teachers on the other. We need to establish a more definite personnel for most of the sections. Each section chairman, or secretary, or both, should have a card catalog of names of those teachers who are willing to enroll definitely in the respective sections and who are willing to respond to questions or to requests for study and report on problems relating to a given subject. May we not make a good beginning in this direction? The Director will be glad to cooperate.

THE DIRECTOR.

PART I

GENERAL SESSIONS

1. Thursday Evening

The 1922 session of the High School Conference began, as usual, with a general session at the Auditorium at 7:30 P. M., November 23. Dr. R. E. Hieronymus presided.

After some preliminary announcements Professor H. A. Hollister, Director of the Conference, was presented, and spoke, as follows, on **"Problems Ahead";**

For the seventeenth time your Director is called upon to direct the affairs of this Conference. It is not without some trepidation that he undertakes once more to project the course of its further activities.

As a prelude to this effort to chart the unknown let us survey briefly the course we have come; for only by this course may we venture to project our future activities.

First of all this Conference was established as a means for mutual understanding between two closely related branches of our system of public education,—the high schools and the state institutions of technical instruction and higher learning. That we have succeeded fairly in doing this is evidenced by the generally representative character of the attendance both as to numbers and personnel.

We have sought to establish here the attitude and practice of intensive study of the problems of secondary education and to maintain always the spirit and the opportunity for full and free discussion and exchange of experiences among teachers and administrative officers of all ranks in so far as our related interests may be concerned.

To the attainment of the above ends we have ever had in mind: (1) organization of the Conference for working purposes; (2) perfect freedom of discussion on all matters appropriate for such a gathering, on equal footing, of host and guests; (3) the provision, within the limits of our means, for continuous work throughout the year and the bringing together of results for general consideration, modification and approval. Your presence and the continued growth of the Conference have seemed to express approval of our aims. But we have not always succeeded, although we may venture to say that many beneficent results have been attained.

The means provided for this enterprise have been: (1) The establishment of an executive committee with power, and the providing of funds and places of meeting by the University. (2) The loyal cooperation of the high schools and the aid and support to our plans for

study and research as well as inspiration to our efforts accorded by all higher institutions of the State.

Time does not permit that we go into details as to results thus far attained by the Conference. Certainly it has greatly furthered the mutual understanding of the participants and the appreciation by each of the other's problems and of the service rendered in either case. It has contributed materially, through the sections, to available literature of practical value in the field of the high school teachers' technic, as well as in problems of a more general administrative character. Notably the work done on objectives has progressed to the point where results may be available as criteria for determining curriculum content.

The published proceedings are widely in demand and are distributed among the libraries throughout this country and in several foreign lands. This material adds a distinct value to the professional literature of the day, and is much sought after by students of education.

We have not been without our failures. As yet we have never succeeded in holding the interest of teachers generally in any large way in the larger generalized interests represented in our general sessions. It is through these largely that we seek to synthesize our problems,—a process which is quite as essential to real success in classroom instruction as are the abilities to organize and present the materials of instruction effectively.

The reason for this is not far to seek. It is a traditional attitude growing out of the very nature of differentiated work in the schools. The result, however is a tendency toward aimlessness in the teaching of a given subject other than success in a certain quantitative accomplishment. This often leaves the pupil all at sea as to the relation and coherence of the varied departments of instruction as they should really appear with reference to the life he is to live.

Another failure, or at least partially or apparently so, is that due to the unwieldiness of several groups of the Conference because of number. This, of course, demands a special treatment by committees in order to avoid converting these working groups into conventions and usurping in them the functions of the general sessions of the Conference to the hurt of both. In the accomplishment of this our high school principals might render a great service by encouraging their teachers who attend to contribute to the discussions.

We need to establish for each group representing subjects taught in high schools a personnel from which respective committees may select those who may be invited thus to participate. With such a list available it would be possible also, to assign to individuals certain problems or experiments to be worked out and reported on at the meetings of the Conference.

It is to certain larger, outstanding problems, however, that I wish to call attention tonight.

Let me say in the first place that this group representing as it does those best trained among our public school teachers has a corresponding responsibility resting upon it. Who better than this group is able to lead in the campaign for better educational conditions? It is to you therefore, that I desire to present for consideration some of the needs in the way of reconstruction and reorganization of our educational scheme.

The rush to the high schools is phenomenal. No such event has ever occurred in the world's history as the rapid increase in enrollment in our public high schools. This is true of Illinois and of all states of the Union. The crowding of our high schools by numbers not anticipated by those who have planned our high school buildings has resulted in a problem of financing which is acute. Some business men are even beginning to talk of the necessity of limiting high school education to the few, rather than to the many, because they seem to think that the cost of the schools will be a burden that the public cannot bear. This is true of business and professional men to a certain extent, but more particularly is it true of our farmer population. The reason for this is not difficult to understand. Most of our farmers, who are farm owners, have never known high schools as a part of their own education and we have never succeeded as yet in selling the high school to the farmer, if we may use a commercialized term. Here in my judgment is one of our great problems in Illinois. We have built up in the last few years a splendid system of rural high schools through our township and community high school laws. Because of the opposition on the part of the farmers to meet their share of the cost of financing these schools, we are in great danger of losing much of the advantage which we have thus gained in the interest of better public education.

The situation in our large cities is even more acute where we find thousands of students on double shift in the public schools because there are not nearly enough buildings and teachers to care for them in the regular way. It is reported that the New York City schools opened in September with 50,000 high school pupils compelled to go on double shift. The Chicago high schools began with twenty or thirty thousand on double or even triple shifts for the lack of adequate facilities to care for those who are seeking a high school education. Think of what this means in the light of the demands of our free institutions! How else can we hope to maintain these institutions than by giving to our youth at least that amount of education represented by high school training?

Educational reorganization is therefore demanded in the interests of true economy. We need first of all reorganization as to our methods of financing the schools. We must certainly find some way on the

basis of equitable distribution of cost by which we may adequately provide for the secondary education of all who are fitted for such training. Further, we must find a way of conserving life powers in individuals. This means that we must find ways and means through better organization for assigning to our pupils the kind of work adapted to them and that will best fit them to maintain themselves and to be of adequate service to society.

More than all else, educational reorganization is demanded in order to save our civilization. To quote from J. H. Robinson in his book on *Mind in the Making*: "It is quite true that what we need is education, but something so different from what now passes as such that it needs a new name. The results of our present scheme of liberal education are disappointing."

Whatever we may think in regard to Mr. Robinson's arguments, it seems to me that we are compelled in the light of the present situation to accept the truthfulness of this statement. In a very large sense, indeed, our educational system is a failure. It is not meeting the demands of our present civilization; nor fulfilling the conditions essential to the preservation of that civilization. Our problems of government, our great economic interests in the industrial and in the social organization of our cities, are problems far beyond the comprehension of the average voter today. Without a more liberal training, how can we ever hope to be able through these common voters to select those who are capable of directing wisely and safely the affairs of our government? Arthur Pound in his work on *The Iron Man in Industry* says: "What the ego-motor needs in leisure is fuel, something upon which it can travel, progress, journey into new realms of thought. The best fuel for the purpose is compounded of interest in the present, understanding of the past, and sympathy with the future. History, literature, science, art, music—all these give to life meaning, and to leisure, inspiration; a reasonable concern in all that man has done, is doing, or is about to do upon this planet—with such equipment any fool could use leisure aright. To sow that seed is the first duty of education, now as always, now more than ever."

Mr. Pound thus characterizes the situation fairly with reference to that rapidly growing group of industrial workers to be found in our great industrial and manufacturing centers where the workmen are called upon merely to tend machines, where no personal effort or any great degree of intelligence is required in order to enable them to perform the day's work. Unless this great army of workers are provided with some means by which they are enabled to employ their leisure in other ways than those which are degrading or lacking entirely in any conditions tending to call out their mental powers and their appreciation of things higher, they can hardly fail to become a serious menace to our social and civic well-being.

Again we find Lothrop Stoddard in his recent book on *The Revolt Against Civilization* pointing out the negative side of the problem. We quote as follows: "This matchless love of truth, this spirit of science which combines knowledge and faith in the synthesis of a higher *wisdom,* as yet inspires only the élite of our time. Most of us still are under the power of the past—the spell of passion, prejudice and unreason. It is thus that ideas and ideals clearly disproved by science yet claim the allegiance of multitudes of worthy men."

It is this passion, prejudice, and unreason to which he refers that is already tending to clog the wheels of industry and to threaten the very centers of civic control and of those conditions which make for the liberties of all men.

We cannot quite agree with the Colorado professor who expressed himself the other day in Kansas City as favoring a return to the old order of things in the teaching of our schools. We believe that the objectives of our education today are to be found rather in our social order and in our social needs than in the interests of past ages. The fact is that we need a thorough reorganization from the ground up in our schools. Look at the fearful waste in our elementary schools. At least two years are spent in the eight grades below the high school to little or no purpose because of the dead monotony of our system emphasized as it is by the inadequate preparation of our teachers in our schools. We need to require a standard of training of teachers that is adequate. We need to organize the work of the elementary schools on a more active basis. Think of the dead monotony of the tramp, tramp, tramp of the pupils through the every-day lessons of the common school taught by teachers whose only standards of teaching are those that they remember as acquired from their teachers and passed on in turn to others even as agriculture came down to the present time from Adam. We have relieved the situation in agriculture. We have still to correct this serious mistake in our educational system.

Against the accomplishment of such a result, we find an apathetic public and a blight of political ambition. Think what the rural situation of our schools has cost and is costing today in the waste of life possibilities on the part of the boys and girls whose opportunities are cut short and stultified by reason of the vicious situation as to organization of the schools and as to the qualifications of teachers employed. Little better conditions are to be found in business and industry where men mad in their ambition to amass wealth are willing to subordinate the interests of thousands of individuals to their plans and to make mere automatons of men and women for work in their shops who should be trained to intelligent citizenship. The situation is not improved by a pernicious discrimination now practiced in the distribution of federal aid to education.

The call then to us is for service, for thoughtful consideration of the problems of education and for earnest participation in every movement calculated to remedy this situation and to give to this country a system of schools commensurate in completeness and effectiveness with the problems which we as a free people are called upon to face.

The second speaker for the evening was Frank H. West of the University Y. M. C. A. staff, who spoke on the subject, **"Conserving the Investment."** His timely discussion is given in full:

I feel that I have a very great privilege tonight in being able to think thru with you, who have in your hands to so large an extent, the future of the State of Illinois, some of the implications of this subject which has been assigned to us, viz. "Conserving the Investment."

I say you who hold the key to the future of Illinois so largely in your hands, and I do not say it to pass any idle compliments. Indeed I might go much farther than that, and I will before I get thru. In the 130,000 students now enrolled in the High Schools of Illinois, undoubtedly lies the hope of our State. Perhaps 15% or 20% of these may go on to college and University life, in which case the leaders of higher education must share with you responsibility for the educational output of the state, but even with this 15% the primary responsibility rests with you, for increasingly we are coming to realize that the vast majority of college students simply continue on the same route along which they started in High School. In college and University life they are merely exaggerated examples of what they were in the High Schools.

Now we are all familiar with the principles of leadership. We know that to direct a community, or a State, or a nation—or an audience, we do not need to reach and convince a majority; even in a democracy. Unfortunately this is still true and while we long for the day when each citizen will stand upon his own two feet and think his own thoughts, in the meantime we must build on things as they are. We are still more or less in the sheep stage of civilization. The mass of people follow.

But tonight we are not concerned with the mass, but with the leaders. Perhaps we may briefly review the statistics with which you are all familiar. Of 33,000,000 individuals having an Eighth Grade education 808 "reached distinction"—that is one so trained has one chance in 41,250 to raise himself above mediocrity. Of 2,000,000 with a High School education, 1,245 reached distinction, i. e., 1 in every 1608; and of 1,000,000 college trained, 5,763 reached distinction, or one in 173. Now tonight we are concerned with both high school and college students for both pass thru your hands and both receive their primary impressions and much of their fundamental training from you. Hence it is no idle compliment and no exaggeration to say that the future of our State is now being decided by you; and we may go further and say that the future of the nation is now being decided by those in charge of the Secondary education of the Country. Is it not a solemnizing thought, that this great opportunity and this enormous responsibility rests so largely upon this single group of people!

Well, if the products of our secondary education are to have a dominating influence in state and national affairs, along what lines should they be prepared to make their influence felt? Naturally we are not the first to ask this question. What are the great needs of our world today—what are the qualities which must be possessed by the citizens of our great republic?

From every walk of life and from every corner of the world come voices speaking to this subject. Different phraseology is used, but in the main the same ground is covered. Dr. J. A. C. Chandler, President of William and Mary's College, names five essentials which should be possessed by every citizen of the Republic. They are:

1. Character
2. Ability to make a living
3. A vital interest in his community
4. A vital interest in State and National Government
5. Be an asset from a cultural standpoint.

Now I'd like to add one essential and substitute another for one of Dr. Chandler's and then use them as a basis for our discussion. I'd like to add "a clean, healthy, efficient body," and I'd like to substitute "a knowledge of world relations and a vital interest in world brotherhood" for the "being an asset from a cultural standpoint." And in so doing I do not mean to ignore the importance of this point. It simply seems to me not to be pertinent to our discussion tonight. The six essentials would then be:

1. Ability to make a living
2. A clean, healthy, efficient body
3. A vital interest in the Community
4. A vital interest in the affairs of State and National Government
5. A knowledge of world relations and a vital interest in world brotherhood
6. Character.

Each one of these is not only important, it is essential. In the United States it seems unnecessary to stress the first point, "ability to make a living," and yet even in this, the wealthiest nation in the world, in ordinarily prosperous times 10,000,000 people live below the poverty line. Fortunately the answer to this question is available—secondary education does pay financial dividends on the money invested.

Our high school system costs money and takes time which is worth money. It takes money from the State, from the Community and from the parent and it demands time which a boy might spend in productive toil. And the cost of education has been growing increasingly heavy.

During the time that our population has increased two-fold, the cost of our secondary education has increased eight-fold, until at the present time it is costing us annually upwards of a quarter of a billion dollars. Viewed in proportion to the size of our Nation, this may not seem to be a large sum, and perhaps that is so. Certainly it is going to cost more. Very probably the figure mentioned is lower than the facts for it is estimated on the basis of $85 per capita, when as a matter of fact in most of our communities where we have up-to-date equipment, the per capita cost runs much higher. In several small towns and villages, where I investigated the cost, I found it to run between 125 and 162 per year per student. However, judged purely from the financial results the investment is a good one.

According to the figures with which we are all familiar, the average earning capacity of those with an elementary school education, before the war, was $500 a year, and the average for high school graduates was $1,000 a year, which means that before the war every day spent in High School was worth $25 in actual money to the student. That is to say, the High School graduate will earn $20,000 more in his 40 working years, than the man who quit when he completed the elementary course of training.

Furthermore, according to Government statistics, his High School education cost 47.95 cents per day—say roughly 50 cents and you have a return of 5000% per day. According to those figures, the High School student cuts a bigger melon every day, than the one cut the other day by the Standard Oil Company.

But I am sure that, important as it is, if increasing the financial ability of the High School student were the sole or even the chief objective of secondary education, a large percentage of those now devoted to this calling, would be endeavoring to increase their own pecuniary returns elsewhere. No, this is not

the chief objective. We are living in a democracy. Life in a democracy involves certain obligations, as it affords many privileges and advantages. "The purpose of a democratic nation is so to organize society that each member may develop his personality primarily thru activities designed for the well-being of his fellow members and of society as a whole. Consequently, education in a democracy, should develop in each individual the knowledge, interests, ideals, habits and powers, whereby he will find his place, and use that place to shape both himself and society ever toward nobler ends."

It is some such view of democracy and of education as this which has attracted and is increasingly attracting to the teaching profession tens of thousands of the most idealistic and high-minded men and women of our time. And if dividends are to be returned on those less tangible elements in our investment, it must be so. If we are to produce a generation, which can stand the stress and strain of our 20th Century life, the matter of their physical equipment becomes of increasing importance.

II. A clean, healthy, efficient body.

Is the output of our high schools satisfactory from a physical point of view? I haven't the data as to the general physical efficiency of high school students, but I have an idea we have a good ways to go yet. I presume it is safe to say that we were very greatly astonished at the physical condition of the American youth as discovered during the war. In 1917, 35% of those examined for the Army, were rejected because of physical unfitness and in 1918, 38% were rejected.

Now of course, these statistics are only suggestive. We know the results among High School students are much better than this. Furthermore, there are many young men who could not qualify for the Army, whose physical stamina would yet be sufficient for the ordinary demands of life in peace times —and yet the tests were very simple, so simple in fact, that there ought not to be a single young man, between the ages of 17 and 25, who could not pass them. And a young man might pass these tests, and yet lack a great part of what is to be gained thru physical and athletic training rightly conducted. For 3½ years since the war, I've been engaged in a work of moral and physical reconstruction in France. Most of my work during that time was with French young men. It gave me a very good opportunity to compare them with our own boys. They not only lack in stature and in freedom from disease in comparison with our boys. They have missed that training in team play, and the insistence upon the square deal which has come to be so integral a part of our athletic life. And this lack of training reveals itself all thru their life. The lack of games, games that require the sacrifice hits, the submerging of the interests of the individual to advance the interests of the group goes a long way toward explaining why they are a nation of individualists, while we are so much more highly organized. They have missed also much of the benefits which we gain from the interrelation of body, mind, and spirit. They know it in theory, but they do not practice it. The harmonious development of body, mind and spirit has come to them largely as an innovation during and since the war. The French boy comes to manhood without that vast amount of practical training which every child 15 to 18 years of age has a right to have. The result is he is not prepared to guard against disease as he should be and he is unable to "play the game" in social and political life as he should.

America is far in advance along these lines, but I wonder whether we are living up to all we know or even 75% or 60% of what we know in the realm of physical training. Do our High School graduates have absolutely sound physiques, free from structural or functional defect or deficiency? Do they know how to live so as to maintain continually at its maximum their reservoir of vital energy? Have they physique of a character that best fits one for an abundant intellectual and emotional life of a desirable character? Have they physique of such a character coupled with such knowledge and self control as to best fit them for social and parental responsibilities?

Now these two qualities of a citizen are essential, but they may be called primitive qualities. It is as important for a Cave man to have a strong body and to be able to secure a living for himself and family, as it is for a High School graduate. But no man can be called a good and intelligent citizen in this day and age who does not take his part in the affairs of his community —and who does not have an interest in State, National and world affairs. How very provincial many of us still are. What grotesque ideas many citizens still have of other peoples. Some still regard Americans as a super race where as one of our sociologists has proved to his own satisfaction that the Chinese are superior to us in native ability.

Be that as it may, these boys and girls with whom we are associated, must soon take places of comparative leadership in local, State, National and world affairs. For this they must be prepared. As we look out on conditions today the need is appalling. Take our own State. I was born in it, but I haven't lived in it for 20 years till now, but I've never lost my interest in it and I've followed its doings politically, with interest and often with disgust. Why even in Europe, one can smell the stench of our Illinois politics, and even distinguish it amid the variety of other political odors there to be smelled.

From whence may we expect the leadership that shall lead us out across this Dead Sea of corruption and selfishness in which we find ourselves, unless from among those young men and women who are now in our High Schools? And how shall they lead us unless they be taught? And in what state is the world today? It is only 3 months ago that I returned from Europe. I am still in the process of returning to consciousness and of trying to harmonize what I saw and heard four and five years ago with what I have experienced during the past three years.

Four years ago our President was putting in clearest rhetoric the highest aspirations of the people of the world. He became their prophet. He was ours too. And because the peoples wanted so to see this new day they believed him and thought he represented us. And almost in a twinkling we were accorded a leadership in which we were not ready. Hushed voices spoke of us as the great republic. The supreme idealistic nation of the world, the home of Christian civilization. 'Tis here the eager emmigrant fixes his longing gaze, as toward the pearl of great price and often he selleth all that he hath that he purchase it; that he may become a citizen of that idealized country beyond the seas.

America, now the mecca of students from all over the world, 12,000 of them now studying in this country. Here in the University of Illinois alone are 300 students from the lands across the seas—eager to see how our government, and our business, and our homes are conducted. Until comparatively recently the peoples of the Far East and even the Near East got their information regarding us largely thru missionaries, and they got quite naturally, what we aspired to be, not what we really were. During the war, whether they learned of us thru the utterances of our President, or in other ways, we were always idealized, but now how we have fallen. How we have been gradually sinking in the eyes of Europe and of other parts of the world since we refused to approve the treaty, which we helped to draw and the League of Nations, which we fathered, and as Clemenceau said the other night in New York—we proposed no substitute. We shed our blood together, we helped to draw up terms for peace and then we quit.

Then thru our Ambassador at London, we announced that we went into the world war not to make the world safe for democracy, not to insure to small nations a fair deal, but to save our own skins, and that we proposed to continue to save them by participating in European affairs only when they affected us commercially.

The youth of our land must be made to understand these happenings. They must know that we cannot remain a hermit nation if we would, and they must be made to feel that they would not if they could. They must be taught that with men, so with nations. The strong must bear the burdens of the weak, and of these burdens are not financial ones, but matters of friendliness, matters of spirit, matters of leadership. Will the present generation of High School students be equipped in information, ability and genuine interest for the larger relationship into which they must enter? *And then there is the point on which, so far as I can see, there is complete unanimity. The absolute essentialness of character,* and herein is the real test of education today. That it aids men to make a living there is no doubt. That it is on the way to make us a better race physically, we feel sure. That it is slowly giving us a *better informed interest in local, State, National and world affairs* is generally accepted. The question is not infrequently raised, however, about the results in character.

In an address before the National Educational Association, Secretary Hughes said "when we consider the true object of education to give the training which will enable one to make the most—that is the best of oneself we must realize that the foundation should be laid in a few studies of the highest value, in self discipline, and that there should be supplied every incentive to attain that mental and spiritual culture which connotes not merely knowledge and skill, but character; and Dr. Henry Newman in an address on Moral Values in Education said "A schooling that imparts knowledge or develops skill or cultivates tastes or individual aptitudes, fails of its supreme object, if it leaves its beneficiaries no better morally. In all their relationships, present and future, that is as school mates, as friends, as members of a family, as workers in their special vocations, as Americans, as world citizens, the greatest need of our boys and girls is *character,* the habitual disposition to choose those modes of behavior which most do honor to human dignity. Not simply to learn to tell the truth, or to respect property rights, but to relaize in ever more vital ways that the worth of life consists in the endeavor to live out in every sphere of conduct the noblest of which one is capable—this it is which gives education its highest meaning."

The Master of Balliol, in old England, facing the same situation, described that which was needed in terms which have grown on me the more I have thought of them. "A really great character" said he, "possesses four elements:

1. Intensity of feeling
2. Quickness of sympathy
3. Moral Nobleness
4. Religious Earnestness.

Strange elements are they not? And yet are they not the essential ones?

Intensity of Feeling. Who is it has said that 90% of our actions are the result of our emotions, not of our reason? Was it Lincoln's reason that lead him when he saw that slave girl torn from her mother's arms in New Orleans and sold on the block like a horse or a mule; was it reason or feeling that lead him to clench his fist and exclaim to his friend Hanks, "John if I ever get a chance to hit this thing, I'll hit it hard."

Was it reason or feeling that led Jacob Riis, whom T. Roosevelt one time declared to be the most useful citizen in the United States, when he saw a big policeman take his little dog and dash its brains out against the door jam of a tenement house in which Riis was living, to swear that he would destroy the system which made that sort of thing possible if it took his life time and even his life to do it! Was it feeling or reason that made the Master of men take a rope, as I twice saw it so wonderfully portrayed at the Passion Play in Oberammergan last summer, and drive those picayunish,

selfish traders out of his father's house? Oh, we must have reason that our emotions may not run away with us, but after all action is secured through the feelings.

Quickness of Sympathy, and that's one reason why the American people are a great people. They have it. Who was the first to feed little Belgium, when in 1914, her country was laid waste and hundreds of thousands were made homeless. Who later responded to the call of the hungry in Austria, and took over the responsibility for feeding millions of Russians as they had done for the Armenians and Chinese and East Indians. Perhaps if we used our reason more and earlier some of these expressions of our sympathy might not be necessary, but who that has been truly great, has not had quickness of sympathy.

Moral Nobleness, honor reliability, dependableness. How it shows forth in little things and great things alike. And how it damns those who have it not! What was it which made us lose confidence in Germany? Was it her atrocities? Was it her wanton destruction of factories and trees and mines? Was it her ruthlessness on the high seas? No, it was her utter disregard for her plighted word. People said and rightly—if a legally signed treaty, prepared and approved in the course of ordinary business, free from stress and strain, can become a scrap of paper at will—what assurance have we of anything?

Religious Earnestness. "Real Religion" says Harry Emerson Fosdick, Professor, Author and Prophet, "involves brotherliness, real inward brotherliness, and nothing externally religious that a man may perform means anything without that."

In Europe since the Armistice, I have seen and heard enough of selfishness and hate and envy, to create a score of wars if the nations were not too poor and too worn out and too much held in check by other things, to fight. In France, in Germany, in Poland, Checho-Slovakia, Austria, Italy, hate is rife. Well, what is the solution? Brotherliness instilled in our students and in theirs, and it can be done. I saw a striking illustration of it in Prague. There in the University in that old, but beautiful city are more than 22,000 students. Among them are all the nationalities, 3,000 refugee Russians, Zchecs, Roumanians, Germans, Poles, Hungarians, Austrians, from those nations who hate each other the most. In the great Studenski Domo glorified Army Hut, these nationalities mingle freely, and as friends. Upwards of 6,000 of them eat cooperatively in the Studenski Domo.

More remarkable still. Two years ago thousands of them lacked even decent rooms in which to live and study. Fuel was impossible, adequate clothing was not obtainable. The idea was conceived of building barracks in which they might live. Money to buy lumber and nails was secured in America and the *students themselves* built the barracks. They took hold hesitatingly at first, for the intelligentia do not do manual labor there. Later they came in ever increasing numbers from all nationalities until 1500 were working and there were to be rooms for only 900. But the last 600 worked that their brothers might have a place to live. Who can deny the capacity for brotherhood on the part of the young?

Dr. Barrie, recently elected President of St. Andrews University in Scotland, in his inaugural address before the assembled students of that University said: "You have more in common with the Youth of other lands than Youth and Age can ever have with each other. You ought to have a League of youth of all countries as your beginning ready to say to all governments "We will fight each other but only when we are sure of the necessity." And Dr. Barrie is sure that by so doing there will be no war, but a great League of Peace made up of the youth of the world—may I close with this verse from John Oxenham.

THE WAYS

To every man there openeth
A Way, and Ways, and a Way
And the High Soul climbs the High way,
And the Low Soul gropes the Low
And in between, on the misty flats,
The rest drift to and fro,
But to every man there openeth
A high Way, and a Low,
And every *Man* decideth
The Way his soul must go.

But boys must be helped and that is your high privilege and responsibility, and we want to help where we can.
How can we help?

State organization and Hi-Y Clubs. 1825 schools have them now, 113 in Illinois.

Purpose—"Seek to create, maintain and extend high standards of Christian living throughout the school and community.

(1) clean habits, (2) clean speech, (3) clean athletics, (4) clean scholarship.

The Y works from within out.

2. Friday Evening

The second general session was convened at the Auditorium on Friday evening, November 24, at 7:30 P. M. Dean C. M. Thompson who was to have presided was absent on account of illness and Professor R. M. Story acted in his stead.

The first number was a delightful vocal selection by the University Glee Club under the direction of Professor F. T. Johnson, of the University School of Music.

Dean K. C. Babcock had been asked to extend the University greeting to the teachers when it was understood that President Kinley could not be present. The latter, however, having returned earlier than he had expected to, was presented by Dean Babcock and spoke briefly, expressing his appreciation of the privilege thus afforded of saying a word or two by way of welcome to such a great gathering of workers in the educational field.

The President expressed the feeling that the University owes to the teachers of the State, and especially to the teachers of the high schools, a large debt of gratitude for their cooperation through the years in joining with the Director of the Conference in developing such a great organization. He spoke feelingly of the mutual benefits derived from such a meeting together of high school and University teachers. He declared that the growth of the University had been, in no small degree, a result of the sympathy and support of the teachers and the help they had given in raising and maintaining standards of scholarship.

He spoke further of his warm appreciation of the encouragement rendered by those coming here from year to year, of the ideal held up that this should be a great institution on which, in future years, should be focused the attention of the educational world. "I welcome you," said the President, "as I welcome all citizens of the state because it is their institution. It is not ours. It is not the faculty's. It is the people's. That is what schools exist for. They are for the training of the boys and girls who go to them. They do not exist to give you and me jobs, positions, salaries,—only so far as we justify our having them by doing the things that these institutions call upon us to do."

Dean Leon C. Marshall of the University of Chicago was next announced and addressed the Conference on **"The Social Science Curriculum of the High School."** The following is an abstract of his address taken from stenographer's notes:

"If there is any branch of study which concerns itself fundamentally with citizenship it is the social science. If from the point of view of cultural methods it means the understanding of the relation of man to man the case of social science is strong. From the point of view of intellectual curiosity there is as much challenge to the imagination and as much challenge to the intellect as in any branch of learning.

There is another manner, however, by which the social sciences may be considered and it is to that phase of method that I should like to direct your attention for a few minutes. It seems to me that it might be worth while to have our facts before us quite specifically. The one-page which has been placed in your hands is for this purpose. If you will be good enough to look on the side of the page that has three tables of statistics you will find in the upper left hand corner a statement of credits that are offered by the average freshman of the University of Chicago. You will see that on the average the situation runs like this: three and one-fourth units of English, three and one-fourth of foreign language, two and one-half of mathematics, slightly less than two and one-half or three of science, combining biological and physical science and two and one-half units of social science. At first glance that is satisfactory from the social science point of view —a fair and just distribution. About two and one-half units is on the whole the average amount being exacted by any of the groups except modern language and English.

Let us go a little farther. What is the nature of this social science of which the student brings two and one-half units when he goes to college? The table in the right-hand corner bears evidence on that situation. As far as the subject of political economy is concerned, three-fourths bring none, one-fourth brings a smattering; in so far as civics is concerned and that includes community civics, something more

than one-half bring none; and the amount of any other subject besides history is insignificant. If that table were summed up it would read something as follows: that there is five times as much history as all other fields of social study combined. But what is this history? About two-thirds bring in one year or more of ancient history, about one-half one year of medieval and modern history combined, about one-half bring as much as one year of history of their own country, about one-fourth present nothing in the history of their own country. In industrial history the average is insignificant—about one-twentieth of one unit.

Let us carry our analysis farther and see if these figures are fairly representatives. Let us glance at figures made by Professor Inglis of Harvard some years ago, and published in his book on secondary education. These figures show the number of schools presenting required and elective work in the first, second, third, and fourth years of high school in each subject designated. The bulk of ancient history work is offered in the first or second year, medieval and modern history in the second and third years, and not until the fourth year is American history well represented. By that time two-thirds of all the students have dropped out of high school. In that same fourth year civics is moderately represented and not represented in any of the earlier years. These figures, taken from the country at large, are typical. This means that, in the first place, we are securing an average of two and one-half units from each student who goes through high school as opposed to four units that have been desired by educators in that field. In the second place, the two and one-half units are fundamentally history and they are history that has been best presented so far as disciplinary terms are concerned. In the third place, it is not merely that it is history, but that there is relatively little history of our own country. I call your attention to the startling fact that one-fourth of our high school graduates go out without history of their own country. It is therefore statistically possible that one-fourth of the graduates of our colleges could leave college without having had any formal course in the history of their own country save in their elementary school days. These children are giving 89 per cent more time to ancient history than to the history of their own country. I submit, without any argument one way or the other, that this is the curious background on which the student has to build if he goes to college and on which he has to work out his citizenship if he does not go to college."

Then followed a discussion of the struggle all along the line of high-school subjects as against the social sciences including history. In this the speaker paid a very high compliment to Professor Henry Johnson who was to follow him as speaking from the standpoint of history.

"In the first place, let us consider what are the possible lines of attacking the situation. It is entirely conceivable that if we were to fight for recognition for more time for social study in the four year high school course, we would take the position that we had a legitimate claim for more than two and one-half units. I have heard some educators argue that point. It seems to me that, as a practical proposition, it has difficulties. Give as much as science, as mathematics, as any other line in the four year curriculum. It seems to me not easy to prove that the number of units ought to be extended from two and one-half to three and one-half. I am inclined to dismiss that proposal as interesting and worth discussing but not one that is actually to achieve any results.

The second proposal is that we reach back into the seventh and eighth grades (wasted years as matters go) for social studies and other intellectual development. I suggest that it is possible to secure more time for social studies by going back to the seventh and eighth grades. That seems to be a feasible line of attack,—to get more time for the social studies without taking any time from the other studies.

The third possible attack is by securing greater emphasis by greater correlation with other subjects—notably with the subject of English, or by going back to the subjects of the seventh and eighth grades for such correlation. One serious difficulty in that situation is in the confusion of what such subjects are or what they should be. Social sciences are by no means in as difficult a position as some other subjects. So while correlation with other subjects such as English is a humble proposition, it should be encouraged.

It seems to me there should be another line of attack. I shall call it by the rather large name of a revision of the whole scheme of social studies. In the time that remains I should like to place before you a scheme of presentation. First, I believe that we should begin with the definite and systematic presentation of our social studies not later than the seventh grade. I believe that much should be done before the seventh grade, but definite and systematic presentation can be begun as early as the seventh grade. It is worth while perhaps to get a little evidence in support of this. I believe that can be done because by that time our children have in fairly good working condition the main essential tool in social science, that is, reading. I am far from saying that all problems of reading are solved at this time. I do say that pupils have sufficient use of the tool to justify the scientific presentation of the subject. Just at that time there is a favorable psychological development in the child. It is then that the youngster awakens to the fact that he is a member of the community and has an interest in the general aspect of the community. Too many of our children drop out before high school or in the process of the high school before they get a large amount of knowledge of the community in which they are to spend their lives. My first argument, then, is that

we go back to the seventh grade with much preliminary work before the seventh grade.

My second argument is that we should not hesitate to organize the entire curriculum around social objectives. Notice that I did not say social studies. I would like to think of it in a broader way. It is our business to organize junior and senior high school curricula around social objectives. It is a third item of my faith that this is no place for the hobbies of narrow specialization. We should, in the seventh grade, begin to develop what we call history,—that sense of continuity, that sense of change. I believe that the pupils should begin to see the framework of our economic society in which they are to live. I believe we should begin to let them see it in geography. I believe that we should have put into all this material an appreciation of law and government. It is an item of my faith that this material should not be presented and need not be presented as mere descriptive facts but should be presented in terms of great fundamental relationships. Let us work out from the interest of the individual so that he may work out from his own interests and understand the society in which he lives. It is a fundamental error to assume that if you tell John to turn on the water faucet that he can have any real understanding of what he is doing. My contention is that he has not and cannot have until he sees something of the painful struggle that man has gone through in harnessing the natural sources that made it possible for him to do that thing. What he needs is the kind of background that will develop an understanding of fundamental relations.

I have a final item of faith on this subject. It is this: that if my material were presented in fundamental relationships the effect on the students in the early years in high school and those who go on to college would be simply revolutionary. Personally I have no question whatever but that the material we are presenting in the sophomore year in college can be perfectly presented in the senior year in the high school when once a proper presentation has been made in the preliminary years. I expect to see the day when this is done. In fact we are shaping our courses in that direction."

Dean Marshall then called attention to a proposed arrangement of social studies beginning with the seventh grade, copies of which had been distributed among the audience.

"An essential part of my argument is this: If we will go back to the time when man was a different type from what he is today and get a view of how he had to live without the facilities that he has today;—give the child an idea of the meagerest beginnings of tools of speech, see how man in the earliest stages had to live,—that kind of life can be pictured in such a way that a child can realize the difficulties men experienced before they had learned, through speech, to work cooperatively with other men. Having given the child such a view we might jump down 1200 years and get another snapshot of man where he had

tools to communicate with—our own Iroquois Indians are an excellent example of this situation. It could be pointed out much better that they had begun that process of harnessing nature. So one could pass on and see the more highly developed speech, communication, transportation, and trade. You could begin to say that under those conditions they were living better and the reason was that they had learned to communicate. Deal with the Iroquois Indians as team workers, as planning organizations—families, villages, clans and other forms of social control. The child will see that this man is living better than earlier man lived and is living better in a large part because he has learned to do team work, learned to cooperate. This seems to me at least a safe way of further attacking the problem. Then we would be prepared to shift away and begin to tell of great fundamental relationships of our modern way of living together. It would be startling for a child to realize that the Iroquois Indian had all the tools we have today. But what we have done has been to make them of better material, and to put power behind the tools.

You will begin to see what I meant when I said that the whole curriculum should be around social objectives. So much for one of the great fundamental relations of human association. In the next part—the second great relation is man the communicator. That is why we hold such conferences today. We multiply our powers by multiplication of communication through telegraph, wireless, printing, etc. Then think of money as the language of trade. It is one of the communicators of this world and will always be used this way. Then deal with the passing of the torch through the family, school and church. They are the agencies by means of which we are able to pass on from older generations to younger generations—what it means to live together well. Then I would suggest another particular social organization dealing with such topics as concern the group, with emphasis on family and political organization, competition, of private property and many forms of social control with emphasis on law and government. Then deal with the significance of social organization as man's living together well. The final topic—man the idealist. What good will it do us to become experts in social organization unless we are doing those things in terms of idealism, socialism, and better thinking?

I may have left with you the impression that this cannot be done with seventh grade children. Let me ask you if such material is not as tangible as any material that is now being presented to seventh grade youngsters. Is it more difficult than anything they are getting? I contend that it is not. It is full of imagination, of educational material. I hold no brief for this particular education. All that I am trying to urge is that we should begin to present our social studies in terms of great fundamentals.

In closing let me remind you of one of our great biologists of today. He says man has been on earth we know not how long, but biologically he has changed relatively little from the first phase. So far as he can predict there will be no great biological change for 5,000 years to come. It is not in this realm that he will make a great advance. The next great realm of advance is social organization, and I submit to you that if this be true the place to begin to teach our fundamentals is to our younger school children."

Abstract of Address Given by Professor Henry Johnson, Columbia University, N. Y.

After expressing his appreciation of Dean Marshall's analysis and broad vision of the social studies and adding a few general comments, Mr. Johnson devoted most of his attention to history. He said in substance:

Among ideas now making reputations for reformers, and destroying the peace of mind of teachers, is the idea that what to look for in the past shall be determined by the latest interpretation of what really matters in the present. The degree of radicalism attaching to this idea may be measured roughly by the area to which it is applied. What kind of history should be studied by boys and girls living today in the United States? Not of course the kind of history studied by boys and girls living today in France or Germany or England. That is mildly progressive. What kind of history should be studied by boys and girls living today in Illinois? Not of course the kind of history studied by boys and girls living today in California or Florida or Maryland. That is truly progressive. What kind of history should be studied by boys and girls living today in Urbana? Not of course the kind of history studied by boys and girls living today in Decatur or Peoria or Chicago. That is radical. What kind of history should be studied by boys in attendance today at the Lincoln School in Urbana? Not of course the kind of history studied by boys and girls in attendance today at other schools in Urbana. That is more radical. What history should be studied by John whose crowning ambition today is to be a railroad conductor? by James, who is thinking that some day it might be interesting to be elected President of the United States? by Charles, who is just looking for a good time? by Lillian, who is dreaming of an operatic career? by Patricia, who is cultivating the manners of a duchess? and by Susan, who has a way of making boy-poets search the dictionary for words that rhyme with Susan? That is radical beyond the peradventure of a doubt.

Each of these questions obviously suggests its own obvious answer to any one who knows what it is that really matters today along the road from the United States to Susan.

It is a wonderful idea, and wonderful, not to say fearful, have been its applications, but the most wonderful thing about it is, perhaps its vitality. Arbiter in the selection of materials for what is now called history before Herodotus was born, applied by historians through the ages, adopted by the first generation of history teachers, a basis for criticism of history teaching as soon as critics began to meet teachers of history, and a ruling idea in the construction of history programmes ever since, it is still so new that its youngest discoverer can proclaim it as an innovation and be accepted as a prophet. For evidence that it is still a growing idea see the *Journal of the National Education Association* for November.

I am not attacking the idea just because it is old. An idea, like a man, may be old and still be useful. I am merely defending the human race against the charge of having waited until the present generation to discover the idea.

The practical application of the idea is, of course, in a true sense, always new. History determined by what really matters in the present must change as soon as something else begins to matter more or run the risk of finding itself no longer useful. History outside of the schoolroom has for this reason been called one of the most ephemeral of all forms of literature. It has become an axiom that the history of the world must be written anew for each new generation, and oftener in times of special emergency. History in the schoolroom has been subject to similar imitations. Inspired by current intuitions of "what is small and what is great" on the current educational horizon, any "new history" hailed as important this week may, after a few months or a few years, be thrown out of the schools as an offense against later intuitions of "what is small and what is great" on the later educational horizon. Of this we have before our eyes, in the present nation-wide attack upon text books, a striking illustration.

History determined by what really matters now will doubtless continue to invite experimentation. But there is another old idea, which, during the past hundred years, has found increasing application. This is the idea of finding out what it was that really mattered in the past, the idea of explaining how the past came to be what it was and thus ultimately to explain how the present grew out of the past. The key-word is *development*. Every condition or event is viewed as a stage in a continuous process of becoming. Every condition or event is conceived as related to something that went before and to something that came after. The importance of conditions and events is measured by the extent to which they help to represent and to explain some course of development. It may be the development of an individual, of a nation, of an industry, of art, religion, politics, football, children's toys—always it is development, a development that implies continuity and a continuity that implies unity. The ideal, not yet attained, and, so far as can now be seen, unattainable, is accurately to represent and adequately to explain the entire process of human development from the first appearance of human beings on the earth to their present stage of becoming.

The pursuit of this ideal is recognized as the distinctive and peculiar province of history, and any other branch of learning which joins in that pursuit is to that extent history. To convey impressions of human development, it may, therefore, be urged, is the unique contribution which history can make to education. How shall that contribution be secured?

The first condition is that facts be selected because they are significant from the point of view of development. The ancient Babylonians can be presented historically only in terms of what really mattered and really shaped life in ancient Babylon, the ancient Greeks, only in terms of what really mattered and really shaped life in ancient Greece, the Middle Ages, only in terms of what really mattered and really shaped life in the Middle Ages, the Massachusetts Bay Puritans, only in terms of what really mattered and really shaped life in Puritan Massachusetts. And the facts thus selected must, of course, be so organized as to present continuous movement, one situation growing out of another, one event leading to another, each chapter a natural sequence of what went before and a precursor of what is to come after.

The first step in grasping the idea of development is a clear perception of differences between past and present. The pupil has his own environment and direct experience to start with. Out of these he must select elements for new combination in images and ideas which he calls the ancient Babylonians or the ancient Greeks or the Middle Ages or the Massachusetts Bay Puritans. Fundamentally he must feel differences between these images and ideas and his own actual environment and direct experience. Feeling differences, he will feel a sense of change, that is, a sense of development, for development is simply change, whether for the better or for the worse, according to any given standards, is not inherently implied. It may be change in either direction. Feeling differences, change, development, the pupil is exercising what is called the "his-

torical sense," the ability so far as it is attainable for him, to see the past through the eyes of the past. Feeling the continuous, unbroken story, always becoming something else, never really either beginning or ending but just going on, feeling, that is, a sense of continuity in the process of change, the pupil feels with ever increasing force the significance of the past to himself.

History thus conceived is, however, as already implied, an imperfect instrument even in the hands of the accomplished historian. It is in part a mere statement of its own unsolved problems, in part acknowledged groping after information not supplied by existing sources, in part unacknowledged guessing, in part persuasive speculation, in part dogmatic inference from highly controversial premises, and only in part the assured information which all of it may seem to be to the untrained reader of historical literature. The question of how the information was established becomes, therefore, an essential step in estimating the value of the information.

But even if history were the complete and uncontroverted exhibit of human development which it is not, the historical method of arriving at truth is a second distinctive and highly important contribution which history can make to education. It is distinctive because from one point of view, all that makes a fact historical is the method of arriving at the fact. This meeting tonight is not historical to those who are here. It is a fact known by direct observation. It will become historical after adjournment to any one not present who may seek to arrive at some information about the meeting or have such information thrust upon him. The printed proceedings will be an original source for establishing by the historical method what happened at the meeting.

All of us part of the time, and most of us most of the time, when we are not asleep, are establishing facts by the historical method or using facts established by the historical method, in our talking, in our writing, in our thinking, sometimes even, in our dreaming. That some training is desirable in a method of such wide application would be entirely obvious except for the fact that relatively few of us ever had it called to our attention even in college courses in history.

To seek through school instruction in history, first and fundamentally, to convey impressions of human development and to arouse some consciousness of the historical method is not of course to imply that other objectives, more commonly set up, may not at the same time be served. Some of these objectives can in fact be served only by teaching the genetic type of history.*

In conclusion the speaker emphasized the need of a thorough survey of the past and present teaching of the social studies and foreshadowed a kind of world history to be made up of the really great and enduring factors in human development, so selected, so organized, and so told as to be suitable for simultaneous presentation to all the children of proper age throughout the world.

3. Saturday Morning

At this session Superintendent William Harris, of Urbana, presided.

After announcements and business Professor W. W. Charters, of Carnegie Institute of Technology, Pittsburg, was presented. Professor Charters discussed the subject of **"Curriculum Building."** The main points emphasized by him were:

The next step in the program of curriculum construction should to my mind be as follows:

*Several illustrations were here given which are omitted from this abstract.

Conference committees have already collected a comprehensive list of objectives which should control the high school course of study. There is also available at the present time a list worked out by Professor Bobbitt as contained in the Educational Monograph of the School of Education of the University of Chicago No. 20. The committees of the conference in charge of the groups of subjects might well undertake the task of determining which of the objectives can be accepted as the specific objectives of each group of subjects as organized in the conference.

After this list has been determined for each group of subjects the committees may then study the present content of the subjects within the group and make recommendations concerning the subject matter and methods of teaching which will best carry out these objectives.

An excellent suggestion was made from the floor in the discussion to this effect. Each high school principal should take up with his teachers the objectives which apply to the different subjects and have them in their own work in the class room make modifications which may be necessary more fully to realize the chosen objectives.

This plan does not look to the complete reorganization of high school education. It assumes rather that the present course of study is not to be radically reorganized. It is to be accepted and modified within the limits of the time and effort which the high school teacher is able to voluntarily give to the matter. The task of complete reorganization is so huge and will call for such a great expenditure of time and money that it is not possible to be accomplished upon a voluntary basis by people who have other duties to perform. But, while we are waiting for a radical reorganization a great deal of very valuable study can be given to the present course of study in order to bring it into line with the objectives which are selected from the comprehensive lists which are already at hand.

Following Professor Charters was Dean William F. Russell, College of Education University of Iowa, who spoke on **"Educational Lessons from the Orient."** Dean Russell first presented a very interesting series of pictures illustrating educational conditions in the Far East, commenting briefly as the views were thrown on the screen.

Following this illustrated talk the speaker discussed, in a very interesting and thought-provoking manner, various educational practices of other countries in comparison with those of our own country. The adjustment of curricula, the amount of work carried by the student, the frequency of recitation or lecture, were set forth by contrast in a manner at once pleasing and highly suggestive.

The entire morning program was one of unusual success for the closing period of the Conference.

The Director declared the session adjourned to meet again November 22, 23 and 24, 1923.

PART II

SECTION MEETINGS

1. ADMINISTRATIVE SECTION

This section met at the Auditorium, the first session being called to order at 9 o'clock by President R. G. Beals.

The report of the committee investigating "Objectives of Secondary School Work" was made by Principal McVey of Harvey. The report as made is printed below.

Principal Marberry of Rockford was chairman of the committee that made a very careful study of grading. He asked several principals to discuss the topics from various standpoints and their discussions are given below.

Mr. Beals reported that the committee on "High School Report Forms" had no further report to make.

Noon Session

The second and last session of this section was held at Wesley Foundation in the banquet hall at 12:00 noon.

A nominating committee consisting of three persons was named.

The business details of the Association were attended to.

President Beals then called upon The Director of the Conference, Prof. Hollister, for a few remarks. Prof. Hollister responded with a brief greeting.

Principal T. J. McCormack was then called upon to address the meeting on "A Code of Ethics for School Administrators." In his matchlessly eloquent way Mr. McCormack responded with the address printed below. It will stand as one of the greatest addresses ever presented before the Conference.

State Superintendent of Instruction Francis G. Blair was then introduced and responded in a very fitting manner with a plea for more sanity and commonness of the right sort in our teaching. Mr. Blair pointed out that there is danger in teaching pupils to be happy only when they have the finest of everything. In his epigrammatical way he pleaded that we teach to "Get sunshine from cucumbers," "Build from the skyline down," and "Take mathematical tablets." The Secretary of this Association was unable to secure a full report of the address.

The new State Manager of Athletics, C. W. Whitten, was then introduced by President Beals and responded as given below.

The Nominating Committee reported as follows:

Secretary-Treasurer—C. W. Kingman, of Ottawa.

Committeeman to serve one year vacancy—Harry Taylor, of Harrisburg.

The meeting adjourned at 2:45 P. M.

Objectives as a Basis for Curriculum Construction

The personnel of the Committee on Curriculum Construction during the period that has intervened since the last high school conference at the University of Illinois has been as follows:

L. W. Hanna, Centralia, Chairman
R. W. Pringle, Normal
C. W. Kingman, Ottawa
R. L. Sandwick, Highland Park
W. C. Baer, Danville
W. E. McVey, Harvey, Secretary

The committee held three meetings during the year. The first meeting convened in the office of Professor H. A. Hollister at Urbana on April 14, 1922. This meeting of the committee was concerned chiefly in defining the next steps to be undertaken in the process of curriculum construction. The data placed in the hands of the committee at that time revealed the following accomplishments:

1. A list of ultimate major objectives determined from a study of the life of man in its social setting.
2. An analysis of these objectives into secondary units of workable size.

The committee was of the opinion that its next undertaking should be an attempt to arrange these objectives in proper sequence according to the psychological nature of children, and the later meetings of the committee were directed toward that end. In the past, we have had a traditional sequence of subject matter and a vague notion of what constitutes various grade levels. In the use of the material that is being presented by your committee, however, we are not greatly concerned as to whether a pupil shall experience these objectives during any given year or before he has reached any particular grade level. What concerns us most is that he shall have mastered what comes before in order that he may advance to higher work. If he is found without a knowledge of objectives that appear early in the psychological sequence they should be taught to him regardless of his school standing.

The work of the first committee appointed to study this subject was devoted largely to the matter of major objectives in the belief that fundamental life interests should be the origin and the basis of procedure. Accordingly, four fundamental life interests were determined, viz., Health, Wealth, Association and Beauty and the principle established that education should impart knowledge, appreciation, habits, and skill, leading up through various activities and subjects to the major objectives. The work of the next committee was to analyze these major objectives and break them into secondary units of workable size. This analysis was presented at the High School Conference one year ago. Your present committee has endeavored to arrange these secondary units in proper sequence according to the psychological nature of children, and this

sequence of objectives is embodied in this report, copies of which are available for distribution.

The committee during the past year has endeavored to make use of many advantageous resources for assistance in planning and carrying forward its work. It desires to acknowledge indebtedness to various groups of teachers throughout the State who have given time and effort unsparingly in the prosecution of our task. Particular mention should be made of a group of principals that cooperated with our chairman, Mr. L. W. Hanna, during the summer session of the Southern Illinois Normal University. Their counsel was especially helpful.

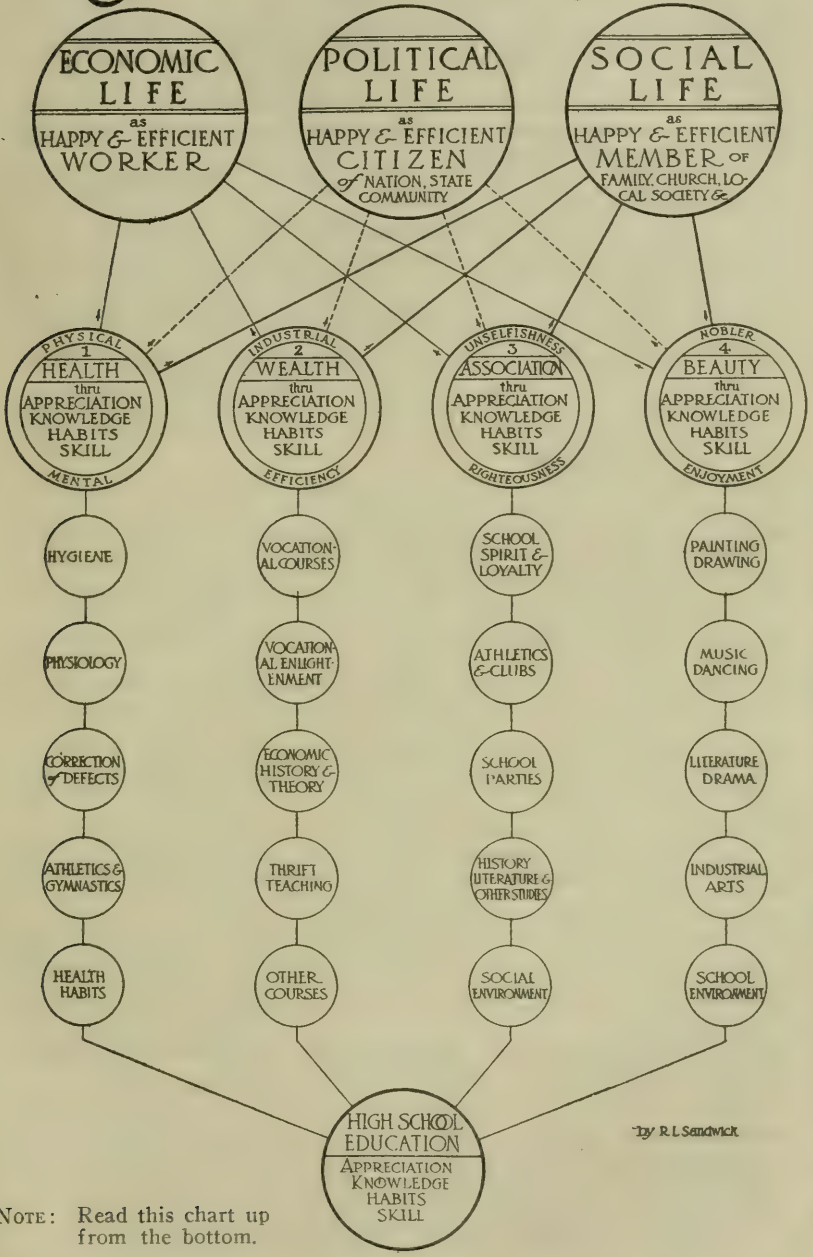
The committee has realized the eagerness of principals and teachers throughout the State for a practical application of its work on curriculum construction, and has a sympathetic understanding of this situation. A practical application of life's objectives is certainly the end in view. It is necessary, however, that this philosophic and more or less abstract work precede any practical application that is to serve our needs. This work is now completed and future committees will be more concerned with finding the best methods of exposing children to the experiences necessary to attain our objectives. The committees have not been idle nor unduly slow. The present committee is not aware of any similar study that has proceeded at a greater rate of progress. It has followed rather closely the advice and example of specialists in this particular field, notably, Dr. W. W. Charters and Dr. Franklin Bobbitt. It has had the sympathetic cooperation of the Director of our Conference, Professor H. A. Hollister. The general rules presented by Dr. Charters before the 1918 Conference governing the technique of scientific methods of curriculum construction have formed the basis for the work of each committee. That the work of the different committees has not been inharmonious with the principles of Dr. Bobbitt may be understood from the following quotation from Dr. Bobbitt's "Curriculum-Making in Los Angeles," No. 20, "Supplementary Education Monographs":

> "Education aims to produce results. These results are human abilities, habits, attitudes, appreciations, skills, powers of judgment, personal characteristics of various kinds, etc. The first practical task of curriculum-making is to draw up for working purposes a list of several kinds of specific abilities and other human characteristics which are to be the results of education. Every item in a curriculum is but a means to an end; it is necessary first, therefore, to know what these various ends are."

Attention is again invited to the emphasis that was placed upon deliberate study and investigation by the Director of the Conference when the work on curriculum construction was begun. Both he and Dr. Charters insisted that this undertaking was not one of a year or two years only, but that it might extend over a period of years. The magnitude of this task is such that tangible results could not be forthcoming at once. Much of the theoretical work, however, has been completed, and, as stated previously in this report, future committees will be concerned with finding the best methods of exposing children to those experiences that will function most in the attainment of our objectives. The committee recommends a thorough study of its report before criticism is offered and after this study has been made it solicits any form of constructive criticism.

The first project then was that of determining these major objectives. Mr. R. L. Sandwick, Chairman of the general Committee authorized by this Conference, presented before the 1919 Conference the report of the Committee, naming the four fundamental life interests: Health, Wealth, Association, and Beauty. The following diagram or chart accompanied this report indicating that education should impart knowledge, appreciation, habits, and skill, leading up through various activities and subjects to the major objectives.

High School Objectives



NOTE: Read this chart up from the bottom.

Health Objectives

1. Habit of keeping the body mechanism properly supplied with oxygen.
2. Habit of maintaining cleanliness of person, clothing, home and general environment.
3. Habit of protecting one's self from preventable accidents.
4. Ability of maintaining postures conducive to the best physical functioning.
5. Skill in reading understandingly.
6. Habit of caring for the teeth, nails, hair, scalp, nose, ear, eye, throat, hands and skin.
7. Habit of protecting one's self from dust, smoke, noxious gases, etc.
8. Knowledge which will enable one to protect himself as far as possible from micro-organisms.
9. Habit of utilizing muscular exercises as a life long means of developing and maintaining a high level of physical vitality.
10. Habit of making one's sleep count in maximum measure in the development and maintenance of a high level of physical vitality.
11. Habit of doing one's part in keeping public property such as streets, alleys, public buildings, parks, etc., clean, sanitary, and free from breeding places for flies, mosquitoes, etc.
12. Knowledge of "first aid."
13. Knowledge of the relation of sunlight to health.
14. An appreciation of the cost of ill health.
15. Skill in presenting clearly and effectively to an audience any body of thought organized for the purpose of promoting health.
16. Habit of applying the rules of dietetics.
17. Habit of using leisure time in such a manner that physical benefits may be derived therefrom.
18. Habit of dressing in ways that promote the physical well-being in maximum degree.
19. Knowledge of the care of foods, their preparation and preservation.
20. Knowledge of how to control sex functions in the interests of high physical vitality.
21. Knowledge of proper heating and ventilation.
22. Knowledge which will enable one to sense and interpret signs of physical weaknesses or fatigue.
23. Knowledge of how to care for the sick.
24. Knowledge of proper feeding, control of diseases and sanitary care as related to food preparation of live stock.
25. Habit of paying willingly one's rightful share of all proper costs for health services.
26. Knowledge of importance of good drainage.
27. Knowledge of enabling one to take precautionary and remedial steps necessary in the protection of one's self and family in case of considerable variety of common ailments.
28. Knowledge that will enable one to avoid colds and conditions that are conducive to them.
29. Habit of keeping informed, concerning health legislation, and habit of obeying and working for health legislation.
30. Knowledge sufficient to gain information easily from the presentation of others.
31. Appreciation of the need within one's specialized field of labor of doing one's share in providing the best practicable sanitary working conditions.
32. Appreciation of the need on the part of employer and employee of bringing about sanitary working conditions and hours.
33. Appreciation of the need of counteracting by means of recreation or avocation the undesirable effects of highly specialized activity.

34. Appreciation of the necessity of doing one's part in securing public hospitals, sanitary water supply, adequate disposal of garbage and sewage, healthful places for recreation, institutions for the blind, deaf, feeble minded and incapacitated.
35. Appreciation of the need of doing one's share in organizing and controlling various recreational agencies.
36. Habit of doing willingly one's rightful share in providing the governmental mechanism necessary to the performance of cooperative functions involved in all aspects of health control.
37. Habit of performing one's civic functions in the effective creation and maintenance of all specialized agencies of health.
38. Knowledge of the symptoms of many kinds of diseases and ailments enabling one to deal with them or get proper specialists to deal with them in the incipient stages.
39. Habit of making one's various mental and emotional states and activities count in maximum measure in the development and maintenance of a high level of physical vitality.
40. Knowledge of the laws of genetics.

Wealth Objectives

1. Skill in reading understandingly.
2. Skill in spelling words which one writes.
3. Skill in writing legibly, easily and rapidly.
4. Habit of keeping one's things in order.
5. Habit of being fair, square and honest in both work and play.
6. Habit of keeping one's self physically fit.
7. Habit of being punctual in all of one's affairs.
8. Habit of attention which will enable one to gain information readily from oral presentation of others.
9. Skill in the use of adequate vocabulary.
10. Skill in using accurately common measuring instruments.
11. Habit of doing one's duty and doing one's best.
12. Habit of being a "good sport" whatever the character of the situation.
13. Habit of controlling one's temper.
14. Habit of "keeping one's head," one's intellectual poise, sense of proportion, and one's emotional serenity in the face of circumstances however trying.
15. Knowledge enabling one to find the facts of the kind desired when needed.
16. Habit of finding answers to one's own perplexing problems with a minimum amount of trouble to others.
17. Appreciation of the importance of doing one's share toward the upkeep of public education, hospitals, government, national defense, fire protection, etc.
18. Appreciation sufficient to enable one to exercise good taste in matters of proportion, design and color.
19. Habit of using leisure time profitably.
20. Knowledge sufficient to enable each member of an organization wherever placed to help determine the best processes to employ.
21. Appreciation of one's own abilities, capacities, aptitudes, strength, weaknesses, etc.
22. Skill in taking part in an informal discussion without deviation and without discourtesy to others.
23. Knowledge of contracts, wills, checks, notes, life and fire insurance, and other legal documents.
24. Knowledge of statutory and common law in so far as it relates to economic affairs with which one is concerned.

25. Knowledge enabling one to perform certain activities connected with one's own home and place of business such as:
    a. Keeping one's tools commonly used in good working condition.
    b. Cleaning, repairing, and lubrication of the various pieces of machinery commonly used.
    c. Doing simple painting, varnishing, whitewashing, etc.
    d. Hanging window shades, curtains, pictures, etc.
    e. Care and repair of various electrical apparatus.
    f. Making of garments, trimming of hats, mending, etc.
    g. Laundering.
    h. Cooking and canning.
    i. Checking meter reading.
26. Knowledge of the problems involved concerning the conservation and economical use of capital materials, time, labor, power, etc.
27. Knowledge and appreciation of natural and social sciences, mathematics, applied art and design, etc., as related to economic conditions in life.
28. Skill in presenting clearly and effectively in writing, orally, or by means of graphs, any body of thought which one has organized for that purpose.
29. Skill in presenting thought by oral reading.
30. Skill in business correspondence.
31. Knowledge sufficient to enable one to interpret his present social and economic situation.
32. Habit of dressing and maintaining a personal appearance best suited to one's social standing.
33. Knowledge and habit of complying with all those social forms and conventions which facilitate human associations.
34. Skill in using the voice agreeably and effectively.
35. Skill in associating with individuals of diverse interests in a tactful and agreeable manner.
36. Knowledge enabling one to choose a vocation that is adapted to one's personal characteristics.
37. Knowledge sufficient to make a wise choice of companions and to develop and maintain friendship with them.
38. Skill in marketing.
39. Appreciation of the importance of estimating at proper value services both given and received.
40. Skill in co-operating with other persons.
41. Habit of keeping informed and being obedient to the spirit and letter of the law concerning financial dealings.
42. Appreciation of the need of assuming responsibility.
43. Knowledge of the methods of the transfer of real estate.
44. Habit of keeping a personal and family expense account.
45. Skill in referring events, places, personages, or other things met with in reading or conversation to their proper geographical setting.
46. Knowledge and thrift in matters of bank accounts, savings, and investments.
47. Skill in using scientific methods in regard to those aspects of vocation that require scientific thinking and a command over the necessary scientific facts, principles, and technique.
48. Skill in sensing the thought and reaction of those with whom one associates or has dealings.
49. Knowledge enabling one to turn to a new calling should conditions make it necessary.
50. Appreciation of the need of doing one's full share in the selection and retention in office of efficient public servants and in the dismissal from service of inefficient or unfaithful public servants.
51. Knowledge enabling one to converse agreeably and effectively upon a great variety of topics and in a manner suitable to the situation.
52. Skill in reading the motives of people with whom one deals.

53. Skill in speaking, reading, and writing any foreign language which is closely connected with one's business or profession.
54. Appreciation of the importance of keeping abreast with progressive development in one's occupational field.
55. Appreciation of the importance of co-operation within an industry to promote in maximum measure the general welfare.
56. Appreciation of the need of a sympathetic understanding between the employer and employee.

Association Objectives

1. Habit of recognizing and appreciating property rights.
2. Habit of controlling one's temper.
3. Habit of being fair, square and honest in both play and work.
4. Skill in pronunciation and enunciation of words which one uses.
5. Skill in reading understandingly.
6. Apreciation of the value of trusting and being trusted.
7. Habit of taking exercises beneficial to good health.
8. Habit of being punctual in all one's affairs.
9. Skill in spelling the words which one uses.
10. Skill in writing legibly and rapidly.
11. Habit of being a "good sport" whatever the character of the situation.
12. Habit of observing the rules of health.
13. Habit of protecting one's self by forestalling preventable accidents.
14. Appreciation of home life.
15. Appreciation of indebtedness to one's parents.
16. Habit of working with both mind and muscle.
17. Habit of using English which is grammatically correct.
18. Habit of keeping the walks for which one is responsible free from snow and ice.
19. Knowledge of those things essential to keeping one's self physically fit.
20. Knowledge of an adequate vocabulary.
21. Appreciation of one's responsibility to make the home happy.
22. Knowledge and habit of conducting one's self properly in the presence of the opposite sex.
23. Skill in obtaining the essential thoughts from the written page.
24. Appreciation of the value of loyalty within the group.
25. Appreciation of modesty and purity.
26. Appreciation of the value to mankind of plants and animals.
27. Habit of strict obedience to both the spirit and the letter of the law.
28. Habit of church attendance.
29. Habit of doing one's part in the care of grass, flowers, shrubbery, etc. on both public and private property.
30. Habit of employing leisure time in ways which are not derogatory to the welfare of the community.
31. Amateur skill in rendering music—vocal or instrument.
32. Appreciation of the time of other individuals.
33. Habit of refraining from gossip.
34. Skill in participating in a variety of play activities, such as swimming, dancing, tennis, driving a motor car, camping, etc.
35. Habit of doing one's part in keeping public property, such as streets, alleys, parks, etc. clean, sanitary and free from breeding places for flies, mosquitoes, etc.
36. Knowledge of the first aid methods necessary in dealing with many kinds of common accidents.
37. Appreciation of music.
38. Habit of destroying by correct methods, weeds and weed seeds on property for which one is responsible.

39. Habit of keeping the fences for which one is responsible in a good state of repair.
40. Habit of dressing in such a way that the best personal appearance will be made.
41. Skill in understanding the oral presentation of others.
42. Skill in using the voice agreeably and effectively.
43. Skill in the preparation and serving of meals.
44. Appreciation of the ability, capacities, aptitudes, strengths, weaknesses, short-comings, etc. of others.
45. Habit of choosing companions wisely and cultivating the friendship of persons of high character, having diverse natures, activities and interests.
46. Habit of performing willingly and cheerfully one's duties as one sees them within the total circle of social interdependencies.
47. Knowledge of how to locate in a library the material which one needs.
48. Appreciation of the value of the other person's point of view.
49. Appreciation of the cost of education paid by parents, city, state and nation; facts presented in such a way as to make educational opportunity a privilege.
50. Habit of "keeping one's head", one's intellectual poise and sense of proportion, one's emotional serenity in the face of circumstances however trying.
51. Skill in participating in an informal discussion.
52. Skill in speaking effectively to an audience.
53. Appreciation of one's own ability, capacities, aptitudes, strengths, weaknesses, short-comings, etc.
54. Knowledge of how to care for the sick.
55. Knowledge of the graphic representation of facts.
56. Skill in taking part in amateur dramatics, theatricals, pageants, etc.
57. Knowledge of how to write a courteous letter according to forms in general use.
58. Knowledge that will enable one to comply with the social forms and conventions which facilitate human associations.
59. Habit of discussing public issues sanely.
60. Habit of doing one's share in the cooperative conservation of human energy and time.
61. Knowledge of rules of order and procedure in public meetings.
62. Knowledge of statutory and common law as they function in daily life.
63. Habit of keeping informed as to legislation.
64. Skill in thinking, judging, and deciding only on the basis of legitimate evidence.
65. Skill in substituting mental for physical force in adjusting social differences.
66. Knowledge which will enable one to recognize the symptoms of many kinds of diseases and ailments enabling one to take the proper precautionary steps in their incipient stages.
67. Habit of taking part in the organized prevention of accidents and disease.
68. Habit of contributing to the support of private and public service.
69. Habit of working without remuneration for the larger group.
70. Appreciation of the rights and duties of one's self and others within one's own group and in relation to the other groups composing the general social whole.
71. Appreciation of the power of organization within society.
72. Appreciation of the services rendered by religious organizations.
73. Knowledge of the methods necessary for revising and repealing laws.
74. Appreciation of one's duty in cooperating to deprive of privileges those who will not carry their proper share of the total social load whether general or specialized.

75. Full appreciation of the value of initiative of the right sort on the part of an individual if that individual is to function to the fullest extent in society.
76. Skill in planning cooperatively enterprises which are socially beneficial.
77. Knowledge which will enable one to refer events, personages, social movements, stages of instiutional growth, etc., met with in one's usual reading or conversation, to their proper geographical and historical setting.
78. Habit of doing one's share in providing for and controlling various recreational activities.
79. Knowledge of the present day methods of molding public opinion.
80. Knowledge of the interdependence of specialized social groups and how to secure one's rights within these groups.
81. Skill in reading foreign languages with which one frequently comes in contact.
82. Appreciation of the individual right to secure products of services of the specialized agencies at costs just to both consumer and producer.
83. Knowledge that will enable one to see mankind from the earliest origins to the present time, in a wide and true historical perspective.
84. Habit of taking conditions as they are now, as a working basis for bringing about better conditions.
85. Habit of doing one's share in the cooperative conservation of society's material wealth.
86. Habit of making plans for the things which one does.
87. Habit of doing one's share in the selection and retention in office of efficient public servants, and in the dismissal from service of inefficient or unfaithful public servants.
88. Appreciation of the value of tact as a personal asset.
89. Appreciation of the necessity for Americanizing our foreign element.
90. Appreciation of relative social values.
91. Ability to appreciate and act on constructive criticism made on one's own work.
92. Skill in sensing the thought and reaction of those with whom one associates or has dealings.
93. Skill in reading the motives of those with whom we deal.
94. Habit of doing one's part toward the elimination of parasitism from so-society.
95. Habit resulting from knowledge of and interest in social problems, of keeping informed as to social phenomena, relations and problems through reading newspapers, magazines, books, publicity documents, etc.
96. Skill in performing unspecialized activities with a view not only to promoting the interests of one's self and family, but also the welfare of the total group of which one is an individual unit.
97. Skill in speaking the foreign language of any foreign people with whom one frequently comes in contact.
98. Knowledge of human psychology sufficient to enable one to deal with mobs.
99. Skill in wise leadership.
100. Appreciation, on the part of the employer, of the problems, troubles, and difficulties of the employees.
101. Appreciation, on the part of the employee, of the problems, troubles, and difficulties of the employer both within the organization and in relation to the total social situation.
102. Habit of cooperating effectively with the various specialists who make up one's occupational group.
103. Appreciation, on the part of the employers, of their rights in relation to employees and the general public.
104. Appreciation, on the part of employees of their rights in situations involving capital, labor, and the general public.
105. Appreciation of the value of one's work to the social group.

106. Knowledge of how to use publicity as a foundation of social control.
107. Knowledge of how to secure the maximum benefit from travel.
108. Habit of seeing that cooperative services are rendered with economy and efficiency.
109. Knowledge that will enable one to employ scientific methods in the solution of economic, political, and social problems.
110. Appreciation of a large group consciousness relative not only to the local community group but to the state, national and world groups.

Beauty Objectives

1. Habit of keeping the premises for which one is responsible neat and attractive in appearance.
2. Habit of doing one's part toward the elimination of weeds.
3. Habit of observing those rules of health which will keep one in such physical condition that one's environment will be appreciated to the fullest extent.
4. Habit of doing one's part in keeping alleys, streets, roads, etc. attractive in appearance.
5. Habit of keeping one's private conveyance clean, neat, and attractive.
6. Habit of doing one's part toward the proper care of grass, shrubbery, flowers, etc. in public places.
7. Appreciation of the need for keeping cemeteries attractive.
8. Habit of using good English.
9. Skill in reading understandingly.
10. Skill in pronunciation and enunciation of the words which one uses.
11. Skill in the use of vocabulary.
12. Amateur skill in drawing and painting.
13. Appreciation of drawings and paintings.
14. Amateur skill in rendering music—vocal or instrumental.
15. Appreciation of music.
16. Habit of dressing in good taste.
17. Amateur skill in taking part in dramatics, theatricals, pageants, etc.
18. Appreciation of the drama.
19. Appreciation of performances involving great coordination of mind and muscles, dancing, swimming, skating, skiing, riding, athletic games, etc.
20. Amateur skill in gardening and in caring for house plants.
21. Skill in using the voice in ways both agreeable and effective.
22. Skill in oral and written description.
23. Skill in presenting one's ideas to others.
24. Amateur skill in the workmanship involved in making clothing, hats, furniture, pottery, articles in metals, etc.
25. Appreciation of productions of literary value.
26. Knowledge of the biographies of musicians, painters, sculptors, etc.
27. Habit of doing one's part in keeping boats, street cars, trains, depots, etc. neat and attractive in appearance.
28. Appreciation of attractively arranged and well kept farm buildings.
29. Appreciation of the contribution which birds make to one's environment, including their aid in the destruction of plant destroying insects.
30. Appreciation of the services rendered by street cleaners, housemaids, janitors, caretakers, etc. in contributing to beauty.
31. Amateur skill in designing clothing, hats, furniture, homes, decorations, pottery, metals, etc.
32. A knowledge of arrangement, proportion, color and design in architecture, interior decoration, landscape gardening and sculpturing.
33. Habit of doing one's part in keeping the place where one works neat and attractive in appearance.

34. Habit of doing one's part in the cooperative effort to eliminate unsightly fences, buildings, sign-boards, etc.
35. Knowledge of the history of music, literature and art.
36. Appreciation of the necessity of conservation of the beautiful in nature as forests, streams, fish, birds, game, etc.
37. Skill in one's work sufficient to make possible the greatest enjoyment in the performance of it.
38. Habit of employing one's leisure time for the cultivation of an appreciation of the beautiful.
39. Habits of encouraging civic projects such as pageants, plays, community athletics.
40. Habit of maintaining poise.
41. Appreciation of utilitarian beauty.
42. A knowledge that will make possible an appreciation of the beauty of organic and inorganic matter and of the forces and laws of the universe.
43. Appreciation of the spiritual beauty of living clean and religious lives.
44. Habit of controlling the smoke for which one is responsible.
45. Habit of contributing one's share for the establishment and upkeep of museums, art galleries, libraries.
46. Habit of doing one's share in making ordinances controlling public dumping places, and in seeing that such ordinances are observed.
47. Amateur skill in the production of literature.
48. Amateur skill in musical composition.
49. Skill in reading foreign literature in the original language.

The Weighted Credit System of Rockford High School

J. O. Marberry, Rockford

Mr. Ben M. Hanna, Assistant Principal of Rockford High School, prepared the formal outline of our weighted credit system three years ago and is thoroughly familiar with changes made since that time. He has submitted, at my request, the following brief statement of the system.

"The weighted credit system of grading has been in use in Rockford High School for about eight years. At the present time there is no desire on the part of the teachers to bring about a change either to the letter system of grading or to the flat rate system of one credit to all. This would lead us to believe that although the clerical work attached to such a system might seem to be burdensome, the teachers feel that the benefits to be derived from this method easily overbalance any extra work.

"The criticism has been made that such a system might lead to confusion in transferring a pupil from our school to another or in sending his record to college. When we receive a pupil from any other High School we give him a flat rate of one credit for all passing grades. Other High Schools who receive our pupils as transfers would, of course, give only one credit for passing work. As far as college entrance is concerned, that is regulated by the North Central Association and our grades have no effect. However, in reply to the question from the University as to the lowest grade which we recommend for college entrance, our standard is a grade of 79 or higher, those receiving lower grades do not receive a whole credit and our pupils know that our recommendation will not accompany a credit of .8.

"Another criticism is that it rewards only those pupils who are naturally endowed with an abundance of gray matter. It does reward those pupils who, because of natural ability, get the work easily and quickly but we believe this should be so. In every walk of life the mentally strong men are being rewarded with leadership in various enterprises, with position of power and influence and with higher salaries than their less fortunate brothers. But it does

more:—any pupil by extra effort and more serious intent may also receive the reward of extra credit. It is one of our best means of urging our pupils to greater effort.

"About three years ago the various ideas concerning grading in Rockford High School were crystalized and put into the form of a brief and definite outline which was placed in the hands of every teacher in the High School and the contents made known to the pupils. In the last few weeks a committee of teachers by means of a questionnaire secured added suggestions for the outline and these have been incorporated in the plan you now have.

"This is in no way exhaustive but it provides a measuring rod for the teacher in rating her pupils and shows the pupil how he may pull himself into the next higher group if he has the capacity.

"With these things in mind, let us consider some of the advantages of this system as we have experienced them in its use over a period of a number of years:

"For the school, it provides a uniform method of grading which is understood by the pupils. With it he may easily measure his standard of efficiency, what he has actually accomplished regardless of any individual teacher's rating.

"For the teacher, it standardizes grading and shows the teacher how she must change or regulate her teaching in order to help the pupil develop qualities which will put him into the next higher group.

"For the pupil, the system of weighted credit gives the pupil what he earns. It enables him to analyze the situation, diagnose his own case and see what he must do to better his station.

"It awakens the superior pupil to a sense of his responsibility. It arouses a spirit of competition which is wholesome in every detail.

"Pupils are not prone to do their best and many would fall far short of their best unless they saw definitely that something would be gained by expending extra effort. His reason would tell him that it would be useless to put forth effort to do excellent work if he could get the same credit with less effort. Few people, much less High School pupils, work for the love of working; they work for some gain and for this they should receive reward as we expect to receive reward, here or hereafter."

The following is the outline of Rockford High School's weighted credit system:

System of Weighted Credits, Rockford High School

Rockford, Illinois

94—100	1.2 Credit
88—93	1.1 Credit
79—87	1. Credit
75—78	.8 Credit
0—74	0 Credit

94—100 1.2 Credit

1. Consistently does more than is required.
2. Has a wide vocabulary at his command.
3. Is always alert and takes an active part in class discussion.
4. Has unusual dependability in taking assignments.
5. Is prompt, neat, and thorough in all work and unusually free from teacher's correction.
6. Knows how to use books and is a rapid reader.
7. Has initiative and originality in attacking new problems.
8. Has ability to associate and rethink the problem and can adapt himself to new and changing situations.

9. Has enthusiasm for and interest in the work.
10. Has ability to apply ideas gained in study to everyday life.

88—93 1.1 Credit.

1. Frequently does more than is required.
2. Has good vocabulary and has the ability to speak with conviction.
3. Usually alive to the situation at hand.
4. Careful in complying with assignments.
5. Eager to attack new problems and profits by criticism.
6. Prompt, neat, thorough and usually accurate in all work.
7. Has ability to apply the general principles of the course.

79—87 1. Credit.

1. Does what is required.
2. Possesses a moderate vocabulary.
3. Willing to apply himself during the class hour.
4. Does daily preparation with comparative freedom from carelessness but preparation often limited by personal interests.
5. Attentive to assignments.
6. Has ability and willingness to comply with instructions and a cheerful response to correction.
7. Reasonably thorough and prompt in all work.
8. Has average neatness and accuracy in all work.
9. Has ability to retain recollectively the general principles of the course.

75—78 .8 Credit.

1. Usually does a little less than is required.
2. Attendance often irregular.
3. Listless and inattentive in class.
4. Tools and equipment for work often lacking.
5. Frequently "misunderstands" assignments.
6. Careless in preparation of assignments.
7. Willing but mentally slow in complying with instructions and corrections.
8. Lacking in thoroughness and usually tardy with work.
9. Careless in presentation of work.
10. Seldom knows anything "outside the lesson."
11. Retains fragments of the general principles of the course.

0—74 0 Credit.

1. Lacking in above qualities to the extent that he cannot or will not do the work.

The Advantages of the Letter System of Grading

L. W. Chatham, Pana

Thirty-three years ago F. Y. Edgeworth, Professor of Political Economy at the University of Oxford, inserted an exercise in Latin prose composition in the English Journal of Education, accompanied by a request that the exercise be marked by persons who had taken high honors in the classics at one of the universities, or who had held the position of public examiner. The persons who wished to mark the paper were asked to use the same care that should be used in marking the work of a candidate for the India Civil Service, and in giving marks have regard only to what might be expected from a candidate for that position. Examiners were urged not to allow their own ideals of classical elegance to influence the marks, nor any ideals of any school with which they might be connected. Further, the examiners were asked to assign their respective marks independently and without conferring with each other.

Twenty-eight "highly competent examiners" marked this selection of Latin prose and sent their marks to the editor of the English Journal of Education. The twenty-eight marks, on a scale of one hundred, were as follows: Two gave the paper a mark of 100; one, 90; one, 88; one, 87.5; two, 85; two, 82; five, 80; one, 77; six, 75! one, 72.5; two, 70; one, 67.5; one, 67; one, 59; and one, 45. After a further careful study of Civil Service examinations, Professor Edgeworth concluded that the element of chance in these examinations was such that from one-third to two-thirds of the successful candidates might have failed if a different set of equally competent judges had been appointed. Shortly after an account of this experiment was published, accounts of similar investigations began to appear in our own educational literature, but it has not been much more than a decade ago since the fairness or validity of teachers' marks began to be questioned seriously.

Enrichment of courses of study probably has helped to make the examination paper a less satisfactory means of determining marks, and as studies of the marking systems in vogue and of the manner of assigning marks have increased, numerous tests and scales for measuring ability and achievement of school children have been devised. One publishing house alone advertises nearly seventy different ones. These tests and scales are being extensively used to examine school children. With them we determine our superior children, the feeble minded and the delinquents. A recent issue of one of our educational journals reminds us that they have been used also to examine hoboes, policemen, cooks, candidates, college freshmen and opinions of school boards.

Among tests of school achievement which may be mentioned are Hotz's First Year Algebra Scale, Minnick's Geometry Tests, Buckingham's Scale for Problems in Arithmetic, Monroe's Diagnostic Tests and Standardized Reasoning Tests in Arithmetic; Hillegas' English Composition Scale, Harvard-Newton English Composition Scale, Willing's Scale for Measuring Written Composition, Buckingham's Extension of the Ayre's Spelling Scale; Rugg's Tests for Historical Judgment, Harlan's Test for Information in American History, Sackett's Scale in United States History; Thorndike and Starch and Freeman's handwriting scales. There are also tests of commercial subjects, domestic science, drawing, and in fact nearly all the subjects taught in the high school. There are also numerous groupings of selected tests for testing general intelligence, such as the Otis Group Intelligence Tests, Terman Group Intelligence Tests, The Pressy Mental Tests, The Haggerty Group Tests, The Meyers Mental Tests, National Intelligence Tests and the Army Alpha Tests.

Many tests and scales have been administered to a sufficiently large number of individuals according to certain fixed rules and scored according to a certain key (thus resulting in a set of forms or standards) so that they have become standardized; others are in the experimental stage; some are worthless; some of the best ones are expensive; some are difficult to administer; discrepancies accompanying the general use of some have not been overcome; some are dangerous except in experienced hands and teachers have not been trained to administer them. There is a lack of benefit because teachers seem not able to determine what to do with results. On the whole, the terminology is not understood. (In connection with this point I desire to mention Circular No. 13, Bureau of Educational Research College of Education of this University of Illinois which gives definitions of the terminology of educational measurements.)

Standardized tests have won recognition in school and out as valuable factors in measuring school work and solving causes of retardation and elimination, such as too high standards, lack of flexibility in methods of promotion, inferior mental ability, physical defects, etc. They are here to stay and eventually to form an important part of every good school system. They have grown out of the recognition of individual differences among school children and out of the unreliability of teachers' marks. For teachers whose training antedates courses in standard tests the point of view of these methods of measur-

ing is difficult. Until the field becomes more settled our marks will continue to be based, for the greater part at least, upon the older marking systems.

This paper is concerned primarily with the advantages of one of the older systems—The Letter System—of grading. In any of the marking systems there should be some principle upon which the system is based. Since the days of the Great Shun of China, who, 2200 B. C. examined his officers every third year and either promoted or dismissed them, until within the last decade, grades have been assigned without reference to any standard other than the personal standards of the marker. Even today the personal standard of the marker is probably the controlling factor in those schools in which there is no fixed standard by which teachers may assign marks.

By what standards, then, should marks be assigned? Edgeworth's Latin experiment shows that personal standards of the marker cannot be relied upon even among "highly competent examiners." So universally are marks used as measures of school work, and so dependent upon them are such problems as promotion, retardation, honors, admission to higher institutions, and the like, that their validity ought not be questionable. In fact we have assumed that marks were so nearly correct that there has been a rather common practice of marking to the fractional part of a percent on the 100 basis.

The studies made some six or eight years ago by Gray, Hall, Cattell, Finkelstein, Starch and Eliott, Dearborn and others upon the validity and distribution of teachers' marks are probably matters of common knowledge among school administrators. The conclusions drawn from these studies are the chief basis for the Letter system of grading, and will be reviewed, in part in this discussion.

The study which most vitally concerns high school teachers and administrators, was undertaken by Starch and Eliott of the University of Wisconsin. Two examination answer papers, written by two pupils at the end of the first year's work in English in high school, were reproduced by plates, so that the handwriting, and all errors and changes made by the pupils were reproduced from the original. One hundred forty-two teachers of first year English separately marked these papers. Paper "A" received marks as follows: two teachers gave it a mark of 98 (on the basis of 100); four, 97; three, 96; five, 95; seven, 94; seven, 93; ten, 92; thirteen, 91; ten, 90; eight, 89; nine, 88; twelve, 87; six, 86; five, 85; four, 84; four, 83; eight, 82; five, 81; three, 80; three, 79; one, 74; two, 75; and one each, 72, 70, 66, 65 and 65. The passing grade in the school which this pupil attended was 75. His teacher gave him a mark of 80 on the paper in question. Five of the markers would have failed him. The median of the one hundred forty-two marks is 88.2, probable error, 4.

Paper "B," the poorer of the two, received marks ranging from 98 to 50. The passing grade was 75. This pupil received a mark of 75 from his teacher. Twenty-two out of the one hundred and forty-two teachers would have failed him. The median of the one hundred forty-two marks in this case is 80.2, probable error, 4.8.

Experiments were conducted in the same manner in Geometry in which one hundred eighteen mathematics teachers gave marks ranging from 92 to 27. The median here was 70, probable error, 7.5. A similar experiment in United States History with seventy teachers of this subject gave a range of marks from 92 to 43 with a probable error of 7.7.

Probable error is defined as the deviation from the median or average of the entire group. If the average mark given by a large number be regarded as the true mark, it is probable that at best any one teacher's mark is approximately five points above or below it. Starch finds that the chief factors producing this variability and the approximate amount of variation due to each to be (1) Differences among the standards of different teachers, which contribute two points of the variation; (2) Differences because of lack of ability to dis-

tinguish between closely allied degrees of merit, which also contribute two points; and (3) Differences in the relative values placed upon various elements of the work which contribute one point.

Experiments in regrading papers by the same persons after a period of time long enough so that the details and identity of the papers had been forgotten, also give some surprising differences. It is not unusual to find the second mark differing as much as ten or fifteen points from the first. These experiments show also that the smallest distinguishable steps that can be used by the individual teacher with reasonable validity is about five points.

Since it has been shown that there is always a probable error of approximately five points whether we take the average mark given by a large number of teachers, or the mark and remarkings after a period of time, of an individual teacher, the best possible scale would be one in which distinctions between marks are wide enough to allow for a probable error of at least five points. An illusion of accuracy exists when grades of 100, 99, 98, 97, 96, are given,—finer distinctions than the mind is capable of are being made. This scale has one hundred divisions and the marks imply a fineness of one hundredth between the steps.

Probably the best marking scale of the older systems is one of five to seven divisions. This plan is based upon the placing of all students in or around a central group whose accomplishment is average or medium. The average student makes up the largest single homogenous type. Above and below this average lie groups of smaller size containing superior and inferior students with reference to the average group. For indicating the divisions in a system of marking based upon the above principles letters are usually used. In the case of five divisions the letters A B C D E, or E S M I F, or similar combinations are used, usually denoting Excellent, Superior, Medium, Inferior, and Failure; or Excellent, Good, Fair, Poor and Failure. The principle stated above helps also to eliminate too much severity or too much liberality in assigning marks since the largest single group falls under the "average" and other marks must be arranged above and below it.

The investigations which have been made show that marks on the whole and for large groups of pupils of usual ability should be distributed with a reasonably close conformity to the normal, bell-shaped, probability curve. The reasons for this principle are that physical traits are distributed in accordance with it; that mental functions of which accurate measurements have been made are so distributed; and that marks assigned by many teachers to the same pupils follow approximately this distribution.

One marking system is probably as good as another, or as useless as another, unless there are some principles or standards by which teachers within the same school or departments of the school, assign marks, whether the final estimates follow the normal probability curve or some other distribution agreed upon by the teaching staff. With certain standards for marking first set up, the letter system of grading has these points in its favor from the standpoint of administration:

It eliminates illusions of accuracy.
It is easily administered.
It prevents injustices to pupils.
It eliminates "high markers" and "low markers."
It relieves teachers from embarrassment.
It tends to produce uniformity.

Grading by Arabic Numerals

E. P. Nutting, Moline

In discussing the merits of any grading system we must first agree on what we conceive to be its purpose. Why record grades for school work at all, by any system? In the state university that I attended no grades were recorded. We passed or we did not pass, a very simple system, and one not without considerable merit,—especially from the point of view of the instructors, who were relieved of the necessity of keeping any but the most sketchy of records, if they so wished.

The chief aims of any grading system, I take it, are, first, to have a means of preserving the student's record in a form that will disclose something of his strong and weak points mentally and give the history of his mental development in the school; second, to inform him, his parents and the school executives at stated intervals regarding his progress or lack of progress, enabling him and others who are concerned to compare his mental powers and achievements with those of other students, whether contemporary or of other years.

It is precisely this disagreeable necessity for taking careful stock of the results of their teaching that has led to so much discussion among instructors as to the merits of this or that grading system. The true aims of any grading system are apt to be little considered in such discussions, while the argument grows heated as to which system is best, (that is, the easiest to use) from the instructor's standpoint.

Let us then, without regard to the instructor's personal convenience, consider the numeral system of grading with reference to the legitimate aims of any grading system, namely, its value in the written records of the school and its value as a periodic announcement to the student, and to all others interested, showing his progress relative to his own past record and to the records of others. We will assume, of course, that this discussion has to do with the grading of secondary school work rather than that of higher institutions, for the conditions of work are so different that a grading system best adapted to the work of the college might be quite undesirable in the lower school.

This is important, for there is a general assumption on the part of instructors fresh from college that a grading system good in college is just as good in high school, and they are prone to carry with them into the secondary schools not only methods of teaching quite unsuited to the younger students but also methods of grading quite as ill adapted. Most high school principals will confirm this statement. It is mainly in this way, I believe, that the letter system of grading has been introduced into many high schools, without due consideration of its suitableness for use with the younger students.

There are many numeral systems of grading in use over the United States, but the one most commonly employed uses the numbers from 75 to 100 to indicate varying degrees of more or less satisfactory work and a similar range from about 60 to 74 to indicate varying degrees of unsatisfactory work. Much of the criticism that has been directed at the numeral scale of grading is based on the misconception that such a scale as the one just mentioned is a *percentage* scale. Of course it is not. It may have been at one time, but probably very few who use it now consider its *percent* value at all. It is, let me repeat, merely a scale of twenty-five steps for showing the various degrees of progress from barely passable to excellent work, coupled with a smaller scale of about 15 steps showing how far from barely satisfactory a student's work is.

In fact the whole range of grades could perfectly well be shifted to the *lower* half of the hundred scale with extreme limits at 50 for a maximum and 10 for a minimum, and 25 for a barely passing mark. There is no magic in the numbers 75 to 100, but they have the important advantage of being long

established and everywhere understood. It doesn't matter much where the range of numerals lies; the important requisite is that the significance of the scale be understood by all who use it, and that it be flexible enough to accomplish the legitimate aims of any grading system.

For high school purposes a more flexible scale is needed than for college work, because of the immaturity of the students, and also because the smaller classroom groups make it possible for the instructor to give a more discriminating consideration to the grades issued. The high school student is inclined to scrutinize his grades more closely than the college student, and he is apt to be affected very strongly by slight changes in them for the better or worse. Parental scrutiny too often plays an important part in this stimulation. If an ambitious high school student receives a mediocre letter grade his first month, works harder next month, but again receives the same letter, he is likely to feel that his efforts receive no recognition, and is pretty sure to become reconciled to mediocrity. A numerical system which would enable the instructor to show the student by a two point raise in grade that his effort has been recognized, would keep the student trying. The excellent student too is just as eager in his desire to hold his high grade, and quickly responds to the stimulus of a drop of even one point in a numerical scale, while the weak but earnest student will show an equal interest in a grade that brings him a few points nearer to a passing average and the credits that go with it.—With the unambitious and callous student of course no grading system will avail to prod him into greater mental activity, but such are fortunately few in number.

Most users of the letter system of grading feel its lack of flexibility and try to supplement its meagre four or five steps by interspersing plus and minus signs among the letters. Some even explain to inquiring students that a certain grade is a "high B minus", or that this month's C is a "high C" as compared with the C that he received last month, but not high enough for a "C plus". These devices are not very satisfying to the student, they are the despair of the record clerk in the office, and they must be anything but easy for the instructor to use.—Why not frankly admit the need of a grading system with more steps and employ a number system?

The chief value of a grading system lies in its effect on the human material with which the school is dealing,—the student. When discriminatingly used by a capable instructor a good grading system is a most valuable and powerful aid in keeping students of all types up to their best efforts, which is after all the main purpose in all our educational work. A high school instructor who says he can't bother to decide whether or not John's work this month is one or two points better than it was last month is either more interested in saving himself a little mental effort than in John's progress, or else he is completely overlooking one of his best means of stimulating John to better work. Such an instructor should logically favor having no system of grades at all,—merely a record of "Passed" or "Not Passed" for each student; for such a system would require a minimum of mental effort on his part, since only a few borderline cases would require any discriminating attention at all.

From the standpoint of school records there is no comparison between the letter system and the numerical system. In averaging a student's grades for the semester, in determining his rank for class honors, in computing his rank in his graduating class for the college certificate, and in every other instance in which a discriminating comparison is to be made, the advantage of the numerical scale is unquestioned. The fact that letter grades are almost invariably reduced to numerical values for the purpose of such computations is a confession of their inadequacy, and of the necessity for using some numerical system in the long run.—If eventually,—why not now?

The Administration of Credit in the University of Chicago High School

W. C. Reavis

The University High School in its effort to evolve a credit system relatively free from the evils of "marks" and "ranks" has passed through all the stages described in the report of your Committee on grading. It is the purpose of this paper to sketch very briefly the results of our different experiments, and to describe more fully the experiment we are now trying.

In the early days of our school pupils were rated with absolute marks on a percentage scale. The passing mark was 60%; successful attainment was marked from 60% to 100% depending largely upon the percent received on the final examination; and a conditional pass was granted to students who fell short of the passing mark by a few points. Students passed on condition were required to do further study or receive tutoring and then to pass an examination with a mark of 60% or above before they were certified for credit on the course in question.

The administration of this system of awarding credits was very difficult. The marking standards of different departments and of different teachers in the same department varied widely. These facts were known to the pupils and parents and as a result the courses of certain teachers were avoided while those of other teachers were greatly sought. The per cent of withdrawals from courses was high, and the per cent of failures was sometimes as great as the per cent of successes. The conditional pass was regarded by the students as a disgrace, but it was well known that for most cases sooner or later a list of questions would be prepared sufficiently easy for the pupil to pass, and that eventually credit would be received.

The unsatisfactory character of this credit system was further evidenced in the continual backfire from the homes. Parents could not understand why certain children were marked a few figures higher than their own, and as a result invidious comparisons were made and an unwholesome spirit of competition was aroused which frequently resulted in hard feelings being developed, and unfair methods of work resorted to. On the whole the morale of the school was colored by a spirit of "getting by" which tended to obscure the real purpose for which marks were awarded.

Inasmuch as there was no defense of the marking system on grounds of the scientific accuracy of the absolute marks of the teachers, and inasmuch as the effect on the pupils was undesirable, a change was made to the letter system of rating in which a letter stood for any mark within a certain percentage range. By this modification it was hoped to obviate the practice of students of making hair-splitting comparisons, and to secure from teachers a more defensible rating on the grounds of greater accuracy. The scale was composed of five letters, A, B, C, D, E in which A had a range of 90% to 100%; B, 80% to 90%; C, 70% to 80%; D, 60% to 70% and E anything below 60% or failure.

The adoption of the letter scale was a step forward, and it resulted in the development of a better morale among the students, better rating of students on the part of the teachers, and a more satisfactory administration of the credit system. However, there were many desirable results which the system did not produce. For example, a letter did not serve as an incentive powerful enough to stimulate a strong pupil to do work commensurate with his ability. The only letter to be greatly undesired was E, the failure mark; and with the conditional pass still in use, the student who desired to get through with little work could take a chance of "getting by" and in case of failure might retrieve his pass by enduring some disgrace, but without having to do much work.

The next step in the evolution of the credit system was deliberately taken for the purpose of creating a more wholesome morale among the students by

rewarding effort as well as ability. Weights were given the various letters in the rating scale in order to penalize poor work and to reward good work. Thus a student who was content to merely "get by" the passing mark would gain nothing in the end because of the penalties inflicted for such work. On the other hand the student doing high class work would receive excess weights which could be used to reduce the units required for graduation. By the use of this system quality work was either penalized or subsidized according to the rating received.

In general, the effect of this system of rating was wholesome. Under its administration failure was greatly reduced and the distribution of grades was skewed to the higher end of the scale. The number of pupils receiving conditional passes was also materially reduced. However, the tendency to work for marks and its inevitable consequence, learning of the "lesson getting" type, continued to flourish to an extent considered far too prominent for the intellectual welfare of the students concerned.

An attempt to subordinate the prominence of marks and to encourage the development of genuine intellectual interest was next undertaken by abandoning the qualitative grading scale and substituting for it the "excess credit" or quantitative plan. The work in all the content courses was blocked off into well-organized units in which definite minima were established and for which all pupils were held responsible for mastery. This plan involved the technique of "teach-test-teach again." The pupil who was able to quickly master his minima was encouraged to undertake additional work for which excess credit was granted if done at the mastery level.

The controlling principle in the administration of this credit system was complete mastery of the minima in the content subjects and the attainment of standards of power in the power subjects. The old maxim, "whatever is worth doing is worth doing well" was here applied. The "getting by" habit no longer worked. The pupil could not pass with a 60, 70, 80, or 90% knowledge of minima. He had to master the task set in order to receive credit. For those who could do this readily, the excess credit project offered an incentive to gain additional credit not through the pursuit of a fixed task, but through the following out of an intellectual interest of a voluntary character which would be evaluated by the instructor on the basis of mastery and the quality done, but in no case was the amount of excess credit on a single unit to exceed .2 of the unit.

Although more than half of the pupils of the school engaged in excess credit projects during the two years the plan was in operation, and although in this time in spite of the raising of the passing standard to mastery failure was reduced to the lowest point in the history of the school, the faculty still felt that too many pupils worked primarily for credits and the rewards and privileges attached. In the hope that a higher plane of work might be attained in which a greater appreciation of both quality and quantity might be assured on the part of the students, it was decided to reopen the question of the "credit system" for faculty discussion and legislative action that would lead to the end desired.

Accordingly, recent legislation by the high school faculty has placed our credit system on the following basis: (1) Unit credit only is given. (2) To receive unit credit, work must be done at the mastery level which in the case of content subjects means that the minimal essentials must be understood by the pupil and in the case of the power subjects that the power aimed at is being acquired at the rate desired by the instructor. Work at master level is not to be construed as what used to be thought of as the passing point. The passing level never contemplated real understanding. It simply represented the degree of semi-understanding that would entitle the instructor to let the student by, or that at least would not warrant the instructor in keeping the student back. (3) Projects supplementary to the minimal essentials are to be offered in all courses in order to encourage and to stimulate voluntary effort and genuine intellectual interests. Descriptive reports of such work are to be

sent to the administrative office to serve as a basis for election to Phi Beta Sigma, the honor society of the school, for commendatory reports to parents, and for college certification. (4) As a further incentive to induce the students to undertake independent supplementary projects, recognition is given to meritorious written reports by cataloging them in the school library and by calling the attention of the student body to this fact through a publication of the titles of such reports in the daily school paper, and by classifying the pupil according to the type which most nearly represents the characteristics exhibited in his work. For example, a pupil who masters only the minimal essentials of a subject is rated as type X; one who has not been satisfied merely with mastering the minimal essentials of a subject, but in addition has voluntarily undertaken and completed supplementary projects in accordance with the directions and suggestions of the instructor is classed as type N; the student who has not been satisfied with the mastering of minimal essentials or by the doing of supplementary projects specified by the instructor, but has revealed evidences of broad intellectual interests and power by initiating and independently completing supplementary projects of a character which warrants the teacher in trusting the pupil to work independently is designated as type R. In so far as habits, attitude, effort, and results are concerned the student thus characterized has attained the goal which merits the highest recognition that can be given by the teacher.

The present plan of administering the credit system has not been sufficiently tried to warrant any conclusions. It is believed to be founded on sound principles. It is not perfect; but is regarded by the faculty as a step forward and is designed to accomplish the following results:

(1) The plan is expected to eradicate the tendency of teachers, parents, and pupils to think of achievement in a relative way. It subsidizes working for recognition rather than for reward. The credit reward is the same regardless of whether it represents mastery or mastery plus; but recognition is given on the basis of the standards set up and realized by the individual student.

(2) The plan is designed to make possible the keeping of a more intelligible record of progress by inducing statements of facts from the teachers rather than expressions of opinions. This will be secured through the diagnostic reports on individual pupils sent to the administrative office from time to time on the cards provided for that purpose, whenever in the judgment of the instructor an individual is either not making satisfactory progress or deserves commendation for the amount or character of his work. As these reports may afford an occasion for communication with the parent, for conference with the pupil or for a modification of program, it can be readily seen that the system also multiplies the chances of helping a mal-adjusted student and of encouraging worthy endeavor through timely approval and appreciation.

(3) It further affords a basis for distribution in terms of earned achievements. Teachers under the plan do not have to juggle marks to make the class conform to a probability curve nor do they have to transmute marks into terms of a standard scale. The pupil either masters his minimal essentials, fails to master them, or masters them and goes beyond the supplementary projects. If the pupil fails to reach mastery level he becomes a problem case for analytical study and remedial treatment. If he reaches mastery level he is encouraged to go beyond the essentials in search of intellectual interests. In either case the instructor is not called upon to award an absolute or a relative mark, but to give factual information which shows that he has accurately analyzed the character of the pupil's work. These reports are likewise filed in the administrative office with other data concerning the individual, and are used when it is necessary to make an evaluation of the pupil.

It is confidently believed that this system of administering high school credit will not obscure the real purpose of school achievement as has been done in the past by other systems of grading. With the emphasis placed on mastery

and encouragement given to the development of inclination and power to do independent work, a student is not tempted to work down to the standard of a passing mark. It is, therefore, expected that the new plan will result in further improvements in school morale, and in more wholesome ideas and habits of work.

Some Introductory Remarks on a Code of Ethics for Administrators

By T. J. McCormack, La Salle, Illinois

Why do codes, or collections of rules for conduct, arise? Conduct is a species of social mechanics—the movement of human bodies in social space: and, in an embryonic form, since society began, written or unwritten rules for the *prediction* and *control* of conduct have always existed. I say expressly "for prediction and control", for these two words describe the essence of science in its active aspect. In this sense all ethics partakes of the nature of a science, the science that aims to foretell what other human bodies are going to do, but, more important still, the science that aims to guide and control that conduct toward rational social ends. Ethics is thus also in its passive analytic aspect or content the science of ends, goals, objectives, but not of ends, goals, objectives unqualifiedly, as objects of pure uncanonized desire, but as things that are *worth* having, that we *ought* to desire and that we *ought* to realize in our lives as having permanent and universal value.

Ethics is thus further the search for intrinsic, catholic values, not the values of economics, which are here and always the great disturbing factor, the egoistic factor, but the values of a second *higher* order, the values that emerge from the interplay of intellects (social truth); the values that emerge from the interplay of social persons (justice); and the values that emerge from the interplay of the feelings and the sensibilities, or social beauty. "Social beauty" is a factor insufficiently emphasized in ethical discussions and formulations. The aesthetic glow which accompanies moral acts and judgments is not only a permanent value highly desirable and satisfactory in the possession, but a dynamic factor of immense reach and potency. In this category, too, belongs the whole technique of courtesy and manners and the higher refinements of social intercourse.

Now how are these values, as ends, discovered, formulated, fixed? By the observation of the centuries, by the lessons of individual, group, social and political experience, automatically and subconsciously recorded in custom, tradition and popular maxims, or through rational research codified into creeds, doctrines and laws: a millenial search that has found only a few luminous grains of truth, and that only in two fields, the fields of religion and municipal law, which remain our ideals for all codifications. Elsewhere, only Cimmerian darkness, or twilight, where skulk the Protean monsters of egoism, uncharity and disloyalty.

Politics, national and international, are notoriously exempt from ethical restraint; on the contrary, they have made national egoism, stark and unashamed, their outspoken goal. Commerce is in its ethical swaddling clothes. Its accredited maxim for ages has been "business is business", a formula that has justified all manner of inhumane and predatory conduct. "Caveat emptor", let the buyer beware, has insinuated itself as a maxim into our very law. Trade and industry, in the nineteenth century, together with statesmanship in the twentieth, openly adopted as their supreme canon of action the principle which Malthus and Darwin formulated for the animal world, the principle of the survival of the strongest in the struggle for existence; adopted for the *human* world the ethics of the *zoological* world; substituted for the ethics of the spirit the ethics of the Old Testament; and thus turned backward the ethical evolution of the world eighteen hundred years, while incidentally producing the Great

War.* Only recently have the social horrors induced by these principles been recognized, and has business betaken itself to a radical ethical house-cleaning and joined in the frenzied rout of the thousand and one belated aspirants for ethical salvation. "Commercialism" with its slimes and taints and casuistries, is apparently doomed. Profession after profession, and trade after trade, have embarked on the celestial adventure. It is a universal lustration. The goal is a code. All are adopting codes. A magnificient testimony to our ethical sensitivity, and a harbinger of a new and sane human world!

But what are the monsters, what the errors we are thus combatting? And why this sudden nation-wide sensitiveness to the ethical urge? The Annals of the American Academy of Political and Social Science for May, 1922, publishes two score attempts at the formulation of ethical codes for the professions. Why this sudden illumination? What evils have caused it? We must look for them in the character of our ethical background, in the great mass of silent, inarticulate, subconscious ideals and standards that subtly and automatically determine our ethical reactions and our characteristic types of conduct—to our popular national ethics as reflected in the films, the drama and the newspapers.

A few weeks ago, as part of a formal plan to inject new vitality into the study of the classics and history in our school, we gave the film of Julius Caesar. My pitiful efforts to illuminate the historical meaning of the drama, its beauties of art, architecture, costumes and furnishings, were received with the frigid apathy which they probably deserved. The first faint spark of ethical transport was struck when Caesar, defying the constituted authority of the world, crossed the Rubicon. But the ethical tension, in rapid *crescendo* over successive acts of political villainy, reached its critical point and *burst* when the divine Julius robbed the temple of Saturn. Then wild acclaim and rapturous applause, almost personal, rewarded me for my tact in the selection of this particular instructional revelation.

A year ago, at a teachers' institute in southern Illinois, the intellect of a whole county adjourned with me from the arid lecture-halls to enjoy the humidity of a film the subject of which was the justification of Jesse James. The sad fate of that gallant outlaw, the victim of an unjust social order, moved us all to lachrymose compassion. "Get-Rich-Quick-Wallingford", one of the most successful of American plays a few years back, is the prototype of a whole series of dramas and films exalting and consecrating the burglar, the pick-pocket, the confidence-man, and the thug, converted magically and with light-mocking speed to the full virtuous life by a noble woman's love. *It is the apotheosis of the crook!*

Is this frank popular approval of unethical cleverness, a true translation of our more sober ethical attidudes? Or is it merely a pathological phase of a rich native humor that accepts ineluctable facts.

The absorbing and major ethical interest of our newspapers, apart from this same primitive and melodramatic curiosity about crime, is concerned with the infractions of the seventh commandment. The other national concern in this field is prohibition. Physical chastity and abstention from alcohol appear to be the foci from which all popular American ethical enthusiasm radiates.

I am not concerned with details. I stop simply to note that the great classical literature of ethics and religion rose above these topics. Sarah, St. Augustine, Mohammed, and a host of canonized figures, not to mention the Olympian deities and the glorious minds of Greece, took the celestial flight from different vantage-grounds. My contention is that our intense and exclusive preoccupation with a few self-evident and admitted virtues on a lower *physical* or *bodily* level blinds us to the perception of truths on a *higher* and *more spiritual level;* that, as the Apostle says, "One thing more is needful"; that there are such things as intellectual and spiritual chastity, which are the real,

*See "The Manhood of Humanity" by Alfred Korzybski, New York, E. P. Dutton & Co., page 131.

absolutely desirable goals; and that abstention from psychic "moonshine", by which I mean the products of internal fermentation, is just as necessary for the full and sane life as abstention from corporeal "moonshine". In other words, I would make chronic indulgence in all forms of emotional *self*-intoxication unconstitutional, and so give more scope for the emphasis of the great catholic virtues of sincerity, charity, and loyalty to truth, beauty, and humanity.

Shall I be more clear if I say, that we have, in our popular valuations, *sunk* or lowered the ethical center of gravity from the spiritual plane to the bodily plane, *dropped* the real point at issue, and so committed not only the real sin against the Holy Ghost, but, what is worse, a serious logical fallacy, the *ignoratio elenchi,* which is our characteristic national intellectual damnation? We have strained at a spiritual gnat and swallowed a physical camel. The logical fallacy is that we have made our popular ethics an ethics of the *body,* whereas the real absolute ethics is the ethics of the spirit; we have substituted the ethics of egoism for the ethics of altruism; and the aforesaid camel, tough and undigested in our ethical interior, is the cause of most of our ethical pains.

For here lies the very crux of the situation both for society as a whole and for the groups, professional and otherwise, within that whole. It is the *meum et tuum* of the old Roman law: what is mine and what is thine? In every transaction, in every transfer of property or service, of thought and emotion, in every human intercommunication, whether a material body or a spiritual symbol passes, how much shall *I* take and how much shalt *thou* take? Shall I give all or none? Ibsen has made this dilemma the theme of one of his most poignant tragedies, *Brand.*

Ethical and religious theory has swung backward and forward through all the stages between these two extremes, according as each in history has been carried to excess, wavered steadily between Christ and the extreme apostles of Nietzsche.

The little daughter of George Herbert Palmer, when asked by her brother "why we were put into the world", suggested it might be to help others. "No", the little brother replied, with true male insight, "for, then, what would the others be here for?"* Croce has adverted to the fact that if everybody were absolutely altruistic the upshot of the joint conduct of the world would be the same as if everyone were totally egoistic. It would be a world in which everyone carried everyone's else coal-bucket and every family took in the other family's washing, an ethical shell-game in which everyone always got the pea.

Two Israelitish gentlemen were dining recently in a restaurant, the one the guest of the other. Two fish were brought, a large one and a small one. The host promptly took and placed on his own plate the large fish and ceremoniously deposited the small one on the plate of his guest. Astonished, but bursting with instructional zeal and determined to drive home a moral lesson, the guest politely and apologetically pointed out the grave breach of good form that had been committed in the hope that his host would be spared this embarrassment in the future. "What," replied the realistic host, "do you mean to say that had you been in my place you would have given *me* the large fish and would *yourself* have taken the small fish? "I most certainly do", was the answer. "Vell," said the host with vicious pragmatism, "you godt it, didn't you; vat more do you vandt!"

I think I have cited enough concrete examples to show that there is a mystery here, a knot to be unravelled. Keen intellects, like our Israelite of the big fish, have time and again suspected that the traditional codes of conduct, the standardized rules of courtesy, honor, manners, and politeness, were devices framed by the clever and the strong to exploit the dutiful and the meek. "Be good" some cynic has said, "and be forgotten." "He is a gentleman", a predatory friend of mine once remarked, "I know he will yield rather than

*"Altruism", N. Y., Scribner's, 1919, p. 59.

be insistently disagreeable." The Western allies tasted the fruits of ethical loyalty in the late war. If we owe anything to Nietzsche, it is certainly his clear analysis of this situation. Much of the religious and ethical education of the past has incidentally molded the weak to be the tools of the strong. Codes of ethics and creeds have mostly been written for subjects and the employed, rarely for potentates and employers. "The King can do no wrong;" "Papa supra grammaticam." Philology clinches the argument and words are the fossil testimony of the evolution of "slave" and "master" morality. In several languages "stupid" meant originally "good". "Silly" meant in old English "blessed" (saelig). "Simple" tells its own tale, and "albern", modern German for 'simple", once meant "loyal", "friendly." The "innocent" never hurt. *Sic transit gloria virtutis!**

Yet humanity has always believed and always will believe that altruism is the key to the perfect life. Why this paradox?

Recent ethical thought has struggled more successfully than the old for the solution, and from its answers much that is satisfactory flows. In the first place we must abolish the old traditional distinction between the *ego* and the *alter,* between *self* and *others.* On the animal or zoological level, the distinction holds; on the social human level, which is the ethical level, the lines of separation vanish. There is a merger, a coalescence. We are members of one another. The social, ethical self, the human self or person, is a conjoint, composite self, a psychic structure connected by a myriad strands with all its living fellows and tied by a myriad cords to the living past. The *ego* is swallowed up in the *alter.* What is mine from myself, what I myself have given to myself socially, culturally, and ethically, is only an infinitesmal portion of what is mine as my inheritance from my dead spiritual ancestors and of what is mine as gifts from my living brothers, my co-inheritors. I am a mere knot in a great social web of many dimensions, an accidental collection of slots through which the pearl-hung strands of the gorgeous tapestry of human achievement run and shuttle; a locus in space for the conservation of values just meagerly my own; and the duties which I owe to the wondrous web that makes up and supports my being are my whole higher spiritual existence, my whole ethical life. Rights vanish on this plane, it is the high level of duty, categorical, absolute. Rights belong primarily in the animal plane, to the animal ego that eats and wears clothes, that travels on trains and attends conventions, to the economic ego that invented trade and commerce and business. And to the entanglement of these two egos, to the struggle between them, is due most of our mortal woes. It is the price we pay for our elevation from animalhood to manhood.

The professions have been caught in the entanglement. Professions are devices invented by humanity to conserve the spiritual values of the race and to render back to humanity in the form of service the value committed to them. They are the trustees of the capitalized knowledge of the race, the administrators of its heritages. Professions were the offspring of the spiritual life and were created on the spiritual plane, were the conservators of the spirit. Their essence was duty. Their motive was service, not economic gain, as the priesthood and the ministry have shown by their ideals throughout the ages. They were humanity's primitive machinery for the liberation of a part of the race from selfishness, from the tyranny of the animal economic ego. Their essence and their life were anti-commercial, anti-financial, anti-pecuniary; their goal disinterestedness and detachment. Why did they fall to the animal level and do they now seek the artificial aid of codes to gain again their native heights?

They fell because the society of which they were a part fell. Modern society is an acquisitive society. Its ideals are "Get, not Give!" Its goal is quantity, not quality. "More and still more" are its watchwords. The spirit

*Friedrich Nietzsche, by W. A. Mügge (London, T. C. Jack), page 52.

of man has been suffocated by his own productions. We have become the slaves of the machinery created for our freedom. Ford, Edison and Marconi are the masters of our souls.

This means vulgarly that we have become commercialized, that the masters demand money for their soul-asphyxiating productions and that professional service, the noblest offspring of the spirit, has donned the garish vestments of salesmanship! But the still small voice was still within; the spirit may be chloroformed but it never dies; and codes arise—celestial ladders for climbing out of the commercial slough.

We Americans are a legalistic nation. We believe that virtue is law-made, a machine-product manufactured by the police or by all-wise legislatures. We believe in salvation by external works, not by internal grace.

But life is not simple. Ethical solutions are always concrete, and slip from under the rigid canons of codes. Aristotle said that the masons of Lesbos used a straight-edge made of lead, not of iron, in order that the instrument might fit closely all the unevenesses of the stone, and recommended that the canons of ethics have the same flexibility.

The general principles of ethics remain everywhere identical; but their generality is their weakness, and like all formal principles their emptiness increases with their truth. It is difficult, therefore, in any department to create specific inflexible rules. A comparison of the scores of codes which already exist would probably show that each wrestles fundamentally with the same problem. Each profession has its own specific social relationships which give rise to its own specific problems, apparently different, but at bottom the same. For example, in the law, shall Judge Landis occupy a seat on the Federal Bench and accept a high salary from a highly commercialized sport; or in a more modest field, shall a superintendent of schools be allowed to operate a chicken farm? Everywhere is found the same fundamental antithesis and paradox of egoism versus altruism, to what extent *may* I and *must* I be selfish in order to save my life, and to what extent may I and ought I to be unselfish to serve the world which sustains the life of all the I's that are and of all the I's that are to come? The old notion of the absolute surrender of all one's goods is now recognized as false. In order to be able to give, one must create, retain, and save. In this sense, strength of self and duty to self are the basic conditions of service. In this sense, therefore, the antithesis disappears. Altruism and egoism are not opposite but conjoint aspects of the same social process. The individual is not a separate organism, and his apparent egoism at least when rationalized, is a legitimate part of the altruistic process. In every transaction, even in the commonest commercial exchange, it is possible to conceive that there is a positive gain to both parties. It may be a spiritual gain only. Our Israelitish friend, cited above, gave of the altruistic action a scientific description that would have warmed the heart of Kirchhoff, but he missed the spiritual aroma, the celestial exaltation, the intoxicating savor, the aesthetic glow which forms the core of every altruistic action.

It is probable that the true solution of the present ethical crisis would be to *professionalize* business and industry. The trend for two or three generations has been to commercialize the professions. But the professions, like all spiritual creations, by their very nature refuse to be commercialized, and are always instinctively seeking to recover their pristine purity. Nevertheless, owing to our dual nature, the contradiction continues to exist and the spectacle is presented that ninety percent of the population of the world by some mysterious dispensation are entitled to receive pecuniary and material profit for their services, while the remainder are fore-ordained to receive only a posthumous glory. The situation will, in the long run, not be remedied by increasing the emoluments of those who render spiritual service, that is, by commercializing the professions; but it will be done permanently and effectively by extracting the fangs of commerce.

It is odd that attention has not before been drawn to this possibility. Business, trade, and commerce are potentially as honorable callings as the law, or medicine, or teaching and have the same right to aspire to professional sanctity and poverty. All have "the same right to be free from the vulgar subordination of moral standards to financial interests". "The idea that there is some mysterious difference between the building of schools and teaching in them when built, between providing food and providing health, which makes it at once inevitable and laudable that the former should be carried on with a single eye to pecuniary gain," while the later should be conducted only with an eye to service with a minimum profit "is an illusion only less astonishing than that the leader of industry should welcome the insult as an honor and wear his humiliation as a kind of halo."**

But the ethical redemption of business will evidently be an age-long process, and if the professions are to set up methods of procedure as models for imitation, it behooves them first to perfect and justify their own ideals. Hence, the codes, which aim generally at liberation from selfishness, have attempted a reconciliation of the claims of egoism, rationally conceived as the very condition of service, and the claims of the old absolute altruism which "poured the child out with the bath". From this source flow the duties and rights which are common to every code. First comes the egoistic stage, where compensation is regulated, where members are protected against unfair competition, and where all the defensive machinery of the mutual admiration society is perfected; Next comes the altruistic stage, where the technical training of members was demanded, where educational qualifications for admission were established, and where, lastly, the public needs, society's demand for its own share of its rich ancestral heritages, took the ascendancy. This last stage resulted in the professional *ideal,* which is destined to transfigure our materialistic life.

It will be seen that a code of ethics for administrators will not differ greatly from a code of ethics for lawyers, physicians, architects, or journalists. There will be a few special problems only that can be clarified, like the following for example: the peculiar state of opinion or rather practice concerning teachers' contracts; the amount of duty resting on administrators for improving the culture of large and wealthy communities or of the nation at large at the expense of small communities by a passionate interest in the advancement of the abler members of their faculties; the specific duties which bind the administrator to his institution or locality and on which a brief treatise called "Institutional Justice" as opposed to individual justice, might be written, and in which especially would be treated the methods by which impersonal and objective valuations of talent and ability, as opposed to self-valuations, could be reached. Nearly all the other duties and rights are common to the other professions: the sanctity of confidential communications; the duty of upholding the dignity of the profession and of not disparaging colleagues; loyalty to authority; not acquiring financial interests in businesses connected with the schools; abstention from the more blatant forms of self-advertising and the surreptitious pilfering of other people's positions; the duty to wreck school-systems through the enforcement of ill-advised legislation by hysterical legislators, etc. These scarcely need special emphasis.*

**The Acquisitive Society by R. H. Tawney, quoted by Kohn in "The Annals of the American Academy of Political and Social Science" for May, 1922, p. 3.

*But strong emphasis should be laid upon a factor that rarely appears in the printed codes—the cultivation of a sense of humor. Humor is both a moral and an intellectual quality. It involves not only the intellectual perception of the yawning chasm that exists between the ideal and the reality, but means also the adoption of a liberal and charitable attitude toward the inevitable anarchy and disorder which reigns in our present moral and social life. And it involves finally the cultivation of that poise and imperturbability which are absolutely necessary if one is to remain strong and resourceful and is not to collapse in the face of the inscrutable Destiny which time and again frustrates our plans "rough-hew them how we will."

But one supreme duty would stand forth among them all. That duty is the obligation which faces the administrator of schools with respect to the spiritual capital of the race, the heritages of science, literature, and art, of which he is the sacred trustee. Loyalty to these heritages, which is after all only loyalty to humanity, has sometimes been obscured or extinguished by our zeal for acquiring skill in technique and training for mechanical funcations. "Where", wrote a professor of some mediaeval branch of learning to me recently, "where is the old educated educator?" The technique, the machinery of the profession is, like that of our great mechanical civilization itself, very apt to suffocate its own productions. Our first loyalty as administrators is to that living culture which is the patrimony of the ages and which is the essence of human life. It is our duty to cultivate a holy sense for truth through absorption in that knowledge and culture, a feeling for historical perspective which the majority of us now lack, and above all to develop that critical sense, that flower of scientific education, which causes a man to hesitate to accept all the novelties propounded by popular or professional fashion, which tells him instinctively that certain propositions or programs are false and unscientific, and which enables him to reach such judgments without collecting statistics and without sending out hundreds of questionnaires to people manifold more ignorant than himself, or submitting questions before which the sages of the race have quailed to a popular referendum. The highest disloyalty of which we can be guilty is for us who know something, however little, to confide the settlement of questions of high educational fate to the Toms, the Dicks and the Harrys who know nothing.

A further proof of loyalty to these great heritages would be a resolution which strangely enough is sometimes interpreted as selfishness; namely, for the administrator to protect his personality, his strength, his time and his resources from the myriad encroachments now made upon him either for community service or for special technical investigations. It is absorption in these *extrinsic* occupations that prevents many a man from devoting his time to the real object of his profession, which is the education of the children, and to the real subject-matter of his calling, which is the culture, both static and dynamic, of his race. In fact one of the articles of our code might be devoted to the peculiar *pathology* of our calling, to the peculiar neuroses caused by the distractions and dispersions of our daily petty tasks, and by the insistent demands of the public and the teachers' colleges on our time. In my code, in fact, I should give a prominent place to a new disease which I have discovered, "executivitis", a disorder which few of us escape, and which day after day and year after year diverts our energies from the real objects of our vocation. It is the administrators' St. Vitus's Dance, the tarantella of executives, a form of *centrifugal* neuraesthenia, which always impels us away from the center where our real duties call us, and which, like pinwheels on the Fourth of July, cause us to give out all our sparks from the surface and none from the interior. I have been afflicted with this disorder for years, and it is the reason why to-day I have been unable to adhere to the topic assigned me.

The Athletic Ideals of the Illinois High School Athletic Association

By C. W. Whitten, State Manager

A very casual survey of the present status of high school athletics must convince the observer that their supporters divide themselves by their attitudes, motives and ideals into two groups widely divergent from, if not positively antagonistic to, each other. Probably the best method of classifying these groups is on the basis of the apparent motives that seem to prompt the attitudes that characterize them.

On this basis we should promptly designate one of the groups the "educational motive" group. The educational motive impels those who hold and

advocate it to deal with athletics much as they deal with any other subject of the curriculum. They analyze their activities and outcomes and administer them in such a way as to promote the growth and development of those commonly accepted ideals that seem essential in a democracy. The primary interest of this group is in the physical and moral welfare of the participants.

The second group consists of those who from a variety of motives such as community, institutional or personal prestige, the commercial motive, the desire to conciliate or influence certain "interests", public entertainment, etc., transfer their interests almost wholly from the participants to the spectators and patronize and judge athletic games exclusively from the spectators' point of view.

Now with only the option of choosing between these two groups a confirmed school man can scarcely hesitate to ally himself with the former. And having thus chosen and established my alliance I hasten to announce the "text" or subject of this paper. And from my viewpoint this text or slogan, comprehends everything the most idealistic teacher might hope to achieve through the most faultlessly administered athletic system. It is this: *Athletics for Education.* And thus, in a word, we incorporate into our program all that is good and eliminate and reject all that is evil. And here as in every phase of life and thought, whether it be industrial, commercial, social, political or ethical, virtue is triumphant as long as we can maintain its formulas in broad general and academic terms. It is only when we attempt to reduce these general formulas to concrete rules of action that we encounter all the myriads of opposing forces that grow out of our individual desires to interpret virtue in terms of our own conduct. Even the Christian religion might be universally accepted as an abstract philosophical statement of a most meritorious ideal of life if its advocates would only stop there. But when these meddlesome folk presume to insist that Christianity involves at least a minimum of conformity between philosophy and actual living, some harmony of creed and conduct, we are very soon forced to conclude that Christianity was never meant to mix with business, politics, nor any of the concrete activities of living. It won't work. Or, perhaps it would sound less pessimistic to say, it hasn't worked yet.

There is thus no opposition to the slogan *Athletics for Education.* But let us look into some of its implications.

I am using the term education only in the constructive sense. In another sense, of course, the destructive and demoralizing influence of life are educative. But I am thinking of education as the process thru which the commonly accepted ideals of virtue are attained. And I trust I may be forgiven if I refrain, at this time, from stating the ultimate objectives of secondary education. I am going to mention certain aims as I go along that I am quite sure we shall be able to agree upon as legitimate outcomes of any efficient system of education; and that will be sufficient for my present purposes.

I shall begin by mentioning the most obvious of the outcomes of athletics altho, I am disposed to think, not the most important, yet the only one recognized at all by many people; namely, physical health, strength and vigor.

Time was, and not so many years ago, at that, when one of the distinguishing marks of "the scholar" was to look pale and intellectual; when it was popularly believed that there was something incompatible in the development of a strong, vigorous, active body in conjunction with high scholastic attainments; and when educators showed unconcern, not to say contempt, for that phase of growth and training that has, in these latter days, been included under the term "Physical Education." Even in Germany and Sweden, the two countries that seem first to have realized the desirability of giving systematic attention to physical development, favorable sentiment was slow in coming to fruition. Indeed, school life in a Berlin gymnasium was made so uncomfortable for Frederich Jahn, who later became the founder of the great German system of Turnhallen and Turnvereine that he ran away from school, being at the time,

16 years old. And Henrick Ling, the founder of the world famous Swedish system of gymnastics was, at the same age, expelled from his school at Wexio, because of an apparent surplus of "reckless enterprise and unyielding will."

But ideals and practices have changed since the days of Jahn and Ling and the development of athletics and playground activities with the twofold aim of physical and social betterment has been especially marked in America since about 1890. Football was first introduced as an intercollegiate contest about 1875, and its popularity waxed strong until about 1885 when both school and society began to realize the necessity of civilizing and humanizing it. For thirty years this struggle to reform football was continuous and strenuous. But today football is probably the best of all the interscholastic sports altho it possesses some inherent evils that will always necessitate very careful supervision and guidance.

But along with football there has grown up a myriad of other sports and great numbers of athletic and play-promoting organizations. Athletic clubs, city athletic leagues, Y. M. C. A. leagues, playground associations, settlement houses, boys' clubs and many others evince the popular interest now prevailing in both gymnastic training and in athletics.

We are all so familiar with the tremendous impetus given to physical education by the revelations of the physical examinations incident to the draft law that I need not discuss it here. I am confident the American people, especially the educational forces of the country, consider those revelations as a reproach upon our educational system which should never again have just cause for lodgement against it and are resolved to adopt adequate methods to remedy the defects thus brought to light.

Now I do not pretend for a moment to offer athletics, especially as now commonly conducted, as even approaching, in themselves, an adequate program of physical education. I think the various athletic activities might be made much more valuable than they now are in a legitimate health program. But at best they constitute only a sort of complement of the physical education course.

I need not dwell on the character of the physical benefits to be derived from athletics. To call them to mind will be sufficient for my purposes. They are of two general types, namely: 1st, Organic development. That is the cultivation of what may be called physical capacity. The development of the functional power of heart and lungs may be quoted in illustration. Powers of endurance, increased vitality, vigor and activity likewise come within this classification. All of these are capable of high development within the scope, of course, of certain hereditary limitations.

The second type of physical benefits consist largely of controls. They are not exclusively physical, perhaps, but involve certain psychical or at least nerve phenomena as well. This is the type of development that characterizes the expert baseball pitcher, the successful putter, the tennis champion and, in short, every type of athlete whose success depends upon that nice adjustment and coordination of muscular energy that release just the right amount at the right time and in the right direction.

Again the mental and moral disciplines have been so frequently enumerated and so ably discussed that they are quite universally conceded. These values may in a general way be classified as personal and social. The personal values include alertness, determination, persistence, self-inventory—revealing to one's self one's physical capabilities and limitations, standards and methods of personal hygiene, etc. The social values include discipline in self-control, team work, cooperation, and, in general, all of those self-effacing virtues which in every aspect of living together make so largely for harmony and success in all community or cooperative enterprises.

If, then, athletics offer such excellent values and if these values are conceded by a preponderant majority of educators, how can we account for the unending disturbances, the restlessness, the squabbles, the recriminations, the charges, and occasional discharges that constantly agitate the troubled waters of

college and high school athletics. For it is a truism that school administrators, at least high school administrators, have more troubles in administering the athletic interests of their schools than in any other realm, that is if they are really attempting to administer the school as educational institutions in the interests of the society which supports them and not merely trying to make a "magnificent gesture" to the galleries in the interests of spotlight popularity.

A full explanation of these troubles necessitates something in the way of a partial history of the growth and development of school athletics. You will recall that in the earlier period of educational development athletics were frowned upon by educators, and even when a tardy and somewhat grudging recognition was accorded them, they were not taken into the bosom of the school home and treated as a member of the brotherhood of educational subjects. But they were maintained as a sort of excrescence upon the school system. In general they did not participate in the distribution of school funds. They were left to shift for themselves and in thus leaving them to shift for themselves the school authorities played directly into the hands of certain self-seeking individuals who immediately undertook the exploitation of school athletics largely for commercial purposes. It happens that we are so constructed that nothing makes a stronger appeal to our interests than a contest and I suspect a contest of physical forces is, in our present state of development, the most appealing type of contest. Consequently the type of entertainment which school athletics afforded met with a response which very promptly placed athletics on a plane with great financial enterprises. Receipts of several thousands of dollars at a single intercollegiate football game were very common and $100,000 for the season not rare. High school athletics similarly, though in somewhat lesser degree, were thoroughly commercialized.

Now to maintain this commercial and financial prestige it is absolutely necessary to cater to the interests of the spectators. And I do not hesitate one moment in saying that all of the worst evils of school athletics have grown out of this necessity, real or fancied, of catering to the interests of spectators. There are some minor evils that seem inherent in the activities themselves. But the evils that bring reproach upon school athletics and render them difficult of administration, have developed from this one cause. For the primary demand of the spectator is for a winning team. Educational values, character building, social ends do not enter into his thought. He is a violent partisan whose enthusiasm for a winning team overshadows all else. Very frequently his enthusiasm and partisanship are not satisfied with a mere observation of the game, he must multiphy the thrills by placing a stake on the outcome. Thus gambling is introduced and the demand for a winning team becomes even more insistent and vociferous.

I apprehend that I contribute little of erudition or even of startling information to this presence when I solemnly aver that this is a "jazz-minded" generation. As a whole we are afflicted with a sort of social chorea. I do not think it is a Freudian complex for, as I understand it, that implies a sort of repression of impulses. Repression doesn't seem to be a characteristic of modern life. The old doctrine of control seems to have been relegated to the realm of innocuous senility; and in these days to have an impulse is to seek avenues of expression. This social hysteria is by no means peculiar to youth. Maturity and age are alike afflicted.

Now, I believe it is perfectly legitimate to utilize athletic contests as a sort of avenue of expression of this "exuberance" on the part of high school pupils. In so far as this restlessness is really due to youthful exuberance, the pep meetings, the organized rooting, and the various concomitants of athletic contests are a perfect avenue of expression for it, and under proper direction these may become adequate substitutes for hazing, class-cutting conspiracies, and "roughneck" activities all of which are demoralizing, and destructive of educational efforts.

But when we permit our interscholastic contests to become the avenue of escape for all the neurotic, jazz hysteria of the entire community,—of the

sensational newspapers, that usually have no ideals above advertising and income, of commercial clubs and boosters' clubs whose highest conceptions of ethics are all comprehended in the ambition to "put the town on the map," of that class of respectable materialists who loudly proclaim that "nothing succeeds like success," of the town sports and gamblers, of the hangers-on of pool rooms and smoke shops, why, my friends we overload our safety-valve and our educational engine "blows up" with tremendous mortality amongst educational ideals and outcomes. In short this is exactly the sort of education leading to that ideal of life so discouragingly common throughout the land today which measures virtue exclusively in terms of what one can "get away with."

Now the educational values of athletics and the interests of the type of partisan spectator I have described are almost diametrically opposed. And unless the school authorities can lead the spectators to take the educational viewpoint or else utterly ignore the demands of the self-seeking, partisan "fan" certain evils are engendered which render athletics a positive menace to the educational program instead of the reenforcement they ought to be.

Probably the most striking illustration of the point I am trying to make is one provided ready at hand by history. If we compare the esthetic ideals and the consequent practice of the Greeks in their efforts to develop physical symmetry, beauty and strength with the degrading and brutalizing influences of the Roman circus in its complete surrender to the demands of the Roman spectator we shall have a situation analogous, at least, to the present struggle between the forces who would make athletics a positive educational factor and those who advocate and support athletics chiefly as a source of entertainment or a medium for advertising the town.

In the first place the evils mentioned menace the program of physical education. For if a coach understands that he must win to make good he will neglect the interests of the many for the special training of the few. These few will be over trained to their own eventual physical injury whereas the many pupils who need training are neglected to their great injury. These few, instead of getting an all around general physical education will be subjected to highly specialized development for the accomplishment of specific feats. The activities become totally divorced from the normal play needs of youth. Performers become the highly specialized agents of the spectators.

In a recent address before Northwestern University's School of Journalism, Hugh Fullerton, the veteran sports reporter says:

"We have concentrated too much on the winning of the game, on the development of champions," he said. "Tens of thousands have been shoved aside, sacrificed to this one idea. Big money and big attendance have practically ruined some of our sports and some of our sports writers.

"The time is coming when we shall write more about 20,000 boys and girls on the athletic field at Davenport or Des Moines and less about one champion athlete. I'd like to see the grand stand empty and the playing fields filled."

Secondly the mental and moral values so highly to be prized are subverted and in large measure destroyed. There is a fantastic and unwholesome overemphasis put upon the outcome of games. This results in the bad manners of athletics—irritability in defeat, gloating in victory. It also results in dishonesty as evidenced in evasion of rules of play, eligibility and classification. In short, the influences of this overshadowing passion to win is so subversive of the ends of education as to constitute a positive menace to the constructive activities of the school. It is wholly destructive of the play spirit.

And, thirdly, these destructive influences add unnecessarily to the cost of athletics. To them is due the necessity of a multiplicity of officials to look out for violations of rules and various other items non-essential to the educational values of friendly games and sportsmanlike competition.

Now, of course, all of this is academic and profitless unless we can evolve a course of action designed to reform and improve the situation. And the big question with us today is "what can we do about it?"

In the first place, unfortunately, by no means all educators and educational institutions take the high grounds of idealism essential to carrying out the program of "athletics for education" which I have indicated. Very many high school teachers and principals as well as presidents and professors in colleges and normal schools finding what seems to them a popular approval of devious methods in order to produce a winning team, court popularity and prestige, both institutional and personal, by yielding to the clamor of the "sports" and sacrificing the educational ideals to placate the demands of the spectators. Thus eligibility violations are winked at, professionalism constitutes no bar, athletes are subsidized, and various irregularities are condoned. It is certainly a great pity that the exigencies of winning popularity and prestige in order to increase attendance or to win the support of influential "interests" seem to necessitate a resort to such questionable practices on the part of colleges and normal schools to whom we ought to be able to look for educational leadership. And those of us who are struggling along as best we may to make athletics a positive contribution to our educational program find ourselves severely handicapped at times by the indifference or even open opposition to our efforts on the part of those from whom we have a right to expect approval and support.

Again let me say that by no means all spectators take the destructive anti-educational view I have described. Many of the most regular patrons of the games, especially parents, take an enlightened and progressive attitude toward athletics and are willing to do all in their power to promote the real character-building attitude on the part of players, instructors and spectators. Unfortunately, here as in many other good causes, while patrons of this class may be strong numerically, they are frequently in minority vociferously. And thoughtless people, who after all constitute a large portion of the population are prone to be influenced by clamor rather than by reason. Never-the-less, I believe the first thing that educators should do is to mobilize this sentiment for wholesome athletics and use it as a nucleus around which to build up a corps of intelligent backers for the educational program. I can name a score of influential men and women in my town who are well qualified by reason of ideals, intelligence, and qualities of leadership to take the initiative in such a movement. The school must start a back fire of intelligent loyalty, that will extinguish the flames of commercial exploitation, illegality, gambling and the "Win by any Means" ideal.

There is no reason why athletics cannot be utilized to afford a high order of clean and intensely interesting entertainment without in any degree sacrificing the educational interests. But to accomplish this, teachers, pupils, parents and the whole community need to be educated up to the possibilities involved and need to get firm hold on the proper ideals.

There must be developed amongst the school people themselves a sane and constructive attitude toward athletics. All too frequently teachers are imbued with the idea, so prevalent amongst people in general, that athletics are not an integral part of the educational program but a sort of excrescence upon educational procedure to be boosted or tolerated or condemned according to the individual tastes or prejudices of the teacher. Teachers, and particularly high school teachers must make a serious study of the proper place of athletics in the educational system and then get together in a genuinely cooperative effort to put and keep them in that proper place.

And then, as a corollary of the propositions I have been maintaining if it is true that athletics especially interscholastic contests are a legitimate feature of high school education, eventually they must be put upon the same financial basis as other items of the curriculum. I confidently believe that many of the evils of interscholastic athletics are due to the necessity of making them "pay." If the games are to pay the interests of the spectators must always be catered to. In many communities the destructive influences endeavor to usurp the control of high school athletics thru according or withholding financial support.

I think it is almost as absurd to demand that athletics be made to pay their own way as that classes in Latin or Chemistry or Agriculture be made dependent for their support upon admission charges to entertaining displays of their activities. I do not overlook the fact that athletic contests have an entertainment content superior to that of most educational activities. I have no doubt that schools will continue to avail themselves of the opportunities of income thereby afforded. But I suspect the ideal situation would be for boards of education to assume entire charge of the costs of all such activities and make all contests absolutely open and free to all comers. It is claimed by some writers that the freedom of English boat races from the evils of gambling, commercialism, professionalism and all unsportsmanlike tactics is due in part, at least, to the fact that they are open and free to all who desire to attend. They do not have to pay out.

And still further, I am very much inclined to think that we have somewhat overdone interscholastic athletics. Now, interscholastic contests are of very great educational value. They serve excellently to bring communities into cooperative and harmonious relations, and when well directed they afford opportunities for the practice of the social virtues of courtesy, good manners, friendliness, and unselfish consideration of rival interests not to be found elsewhere. I cannot now conceive of any sort of activity that could serve as an acceptable substitute for these athletic contests between schools. But when we make the interscholastic contest the chief end of our athletic activities we sacrifice a great portion of the value accruing to them. In the first place we put undue emphasis upon the development of winning teams thereby inviting all the evils I have already mentioned as incident to that attitude. And, in the second place we are likely to forget or ignore the play impulse with all of its wholesome activities and outcomes and make our athletics an all-too-serious matter of "beating" a rival.

I find myself becoming more and more convinced that we Americans take even our recreation too seriously. Even in our play we are intense and severe—so much so that I am sure we lose both the physiological and psychological benefits we ought to derive from play. I have heard ladies (?) make the most scathing and caustic remarks relative to the misplay of a partner at "bridge." We unmercifully "pan" the player who makes a mistake, either physical or intellectual, in a game. The loser at golf is a grouch at dinner. So intent are we on winning that even the loss of a game of croquet or a reverse in pitching horse shoes brings on indigestion, heart burn, ill temper and general misery. I am against anything that tends to increase and aggravate this disposition. Too many interscholastic contests do aggravate it. Therefore, I believe the time is about here when we shall put more emphasis upon the intramural contests with all their attendant values and a little less emphasis upon the interscholastic.

I have already mentioned the absence of the commercial and financial motive as one cause of the high type of sportsmanship evident in the English boat races. Capable writers mention, also, the infrequency of the contests and the absence of personal contact by the players as contributing causes. I believe that we would gain much in the character of our sportsmanship if we were to make our interscholastic contests somewhat less frequent.

I have discussed briefly the impatient intolerance we are disposed to show to the mediocre or poor player. There is a converse to the proposition which is equally subersive of sportsmanship and even more embarrassing to school administrators, namely, the worshipful adoration accorded the star athlete. The high school principal would welcome the zero percent team almost as warmly as the 100 percent. The social honors, the adulation, the "flapper favors," the hero worship accorded a star athlete quite regardless of any virtues aside from athletic prowess runs about 90% chance of spoiling him for any really constructive service either to school or community.

One of the most notable misconceptions of our time is that which holds the school greatly indebted to the athletes for their activities. On the contrary, as a general thing, no other class of pupils is accorded as many favors or granted as many privileges as the members of athletic teams. Special help in studies, many absence permissions, special concern on the part of both pupils and teachers, and the expenditure of thousands of dollars, much of it in providing splendid outings for the teams are a few of the privileges and favors accorded. To be sure they must pay by submission to a rigorous and persistent course of training. But even this is a special privilege for which they are really indebted to the school could it be viewed in the right light. I believe parents and teachers would do well by their schools and communities if they would cooperate to convince all school athletes that they are the recipients of many special favors and that the school is entitled to their best efforts and most loyal support.

Another popular misconception is that many boys are lured to school by the athletic activities. Now, unfortunately, I have no statistics on this point but I am thoroly convinced that there is very little in the claim. I have known very few boys who have been thus kept in school and the few I have known would probably have been as useful to their families and to their communities had they been engaged in some productive labor outside of the school. Very few boys or girls of real merit need the lure of special favors of athletics to keep them in school. Moreover, this lure insofar as it has served to attract boys and girls to the high school, is becoming less and less needed. In these days of strenuous competitions, boys in general, while they appreciate and joyously participate in the play of the school, yet fully realize the importance and desirability of the other features of the curriculum. If we really desire a lure to attract boys and girls to the high school we should see to it that the curriculum is of such a character as to appeal to the practical sense, the real feeling of need that is very strong in the consciousness of high school boys and girls especially after the first year.

I would like to recall then, by way of summary: 1. That anyone who has seriously studied athletics from the viewpoint of their educational values must recognize the very high values, both physical and mental and moral that are potential in them if we can only succeed in properly guiding and controlling them. 2. The greatest evils of high school athletics and the greatest obstacles to utilizing them for their highest educational functions grow out of the conflicting ideals of those who stand for "athletics for education" and those to whom they mean chiefly a physical conflict designed as a spectacle and a producer of "thrills." 3. If high school athletics are to serve their fine educational purposes school people as a whole must make a sane and serious study of their proper place and function in the educational system and then cooperate unreservedly to put and maintain them in that proper place.

Progressive, forward looking high school principals recognized the values as well as the dangers of high school athletics years ago and out of their foresight and wisdom there developed in our own state the Illinois High School Athletic Association whose influence has grown until today it stands as the open champion of "Athletics for Education." It is our present ambition to spread the propaganda of this aim by a campaign of education to the end that high school athletics may realize in fact all of those coveted values which their friends and advocates have long believed them to possess. And this ambition explains the action of our State Board of Control in employing a full time state manager whose business it is to take the lead in this campaign. I can assure you that the state manager, the first official of the kind to be appointed in America, seeks the cooperation and advice and the active assistance of every school administrator, teacher, parent or citizen who really believes that athletics have a worthy function in our educational system.

2. AGRICULTURAL SECTION

The sessions of this section were held in room 128 Agricultural Building. The leading paper of the morning session was given by W. L. Burlison of the College of Agriculture. The paper is given here in full.

Vocational Agriculture from the Viewpoint of the College

W. L. Burlison

One year ago Dean Davenport extended his warmest congratulations "to the young men who are so fortunate as to be privileged to teach agriculture in the regularly organized high schools of the state".

In his address, the Dean pointed out the tortuous road along which we have traveled in arriving at so happy a stage in our journey "for better things in agricultural education". It was his wish, of course, that we keep in mind clearly the aim of agricultural education, namely, to give to the agricultural people an opportunity for the same fundamental training which has for so long been the privilege of the lawyer, the preacher or the doctor. We are all, of course, anxious to keep on the main road in the matter of what is right, fair and just to the farming youth of our land. To do this requires clear thinking and at times vigorous and unselfish action.

On every hand we hear the criticism, what is the matter with education? Why do not our schools fit men better for the every day business of life? It it clearly up to us to point the way. We can no longer say that folks are not interested for they are and vitally so. It would give me a great comfort if a plan were at hand which would meet the full demand, educationally, for our complex and rapidly shifting times. These are days in which the world seems to be calling earnestly for men of vision. Are there no Turners to lead us?

More than seventy years ago, "In the West, the man whose voice rang out the earliest, loudest and clearest in this great movement—whose words pealed and thundered through the minds and hearts of the people, and the round shot of whose tremendous broadside of irrefragable facts and logic, and fiery rhetoric, plowed and plunged and ricochetted through these prairies with an energy and vehemence that no bulwarks of ignorance or apathy could withstand, and which brought nearly every farmer and artisan hurrying to his standard, from far and near, and put in motion the imperial columns of our free-born yeomanry the man who threw into the struggle not only the best energies of his mind, but the unwavering faith of his soul and the deepest longings of his heart, and who pleaded for the uplifting and regeneration of the masses and for the 'millennium of labor', as the patriot pleads for his country and the Christian for the salvation of God—the man whose able reports, instructive addresses, and thrillingly eloquent speeches were caught up and re-echoed by the enlightened press of the whole country, without regard to sect or party, and which furnished at once the material and the inspiration of auxiliary and cooperative movements and organizations in many other States, and the man who, as I believe, through all these multiplied and overwhelming labors, was animated not by considerations of self-aggrandizement or sordid gain, but by the loftier purposes of serving his race and honoring God by uplifting and blessing the toiling millions of His children—that man was Jonathan Baldwing Turner, of Illinois".

The great foundation vision of this University came on the horizon during the trying days of the Civil War. Turner, one of our own citizens, at that time was dreaming dreams. He saw a great need and set about to supply that need as he saw it. At a farmers' convention, held about seventy years ago, in Granville, "to take into consideration such measures as might be deemed most expedient to further the interests of the agricultural community, particularly to take steps toward the establishment of an agricultural University", Prof. Turner introduced the following resolutions which show clearly the vision of this grand man:

"Resolved, That we greatly rejoice in the degree of perfection to which our various institutions, for the education of our brethren engaged in professional, scientific and literary pursuits, have already attained, and in the mental and moral elevation which those institutions have given them, and their consequent preparation and capacity for the great duties in the spheres of life in which they are engaged: and that we will aid, in all ways consistent, for the still greater perfection of such institutions."

"Resolved, That as the representatives of the industrial classes, including all cultivators of the soil, artisans, mechanics, and merchants, we desire the same privileges and advantages for ourselves and our posterity in each of our several pursuits and callings as our professional brethren enjoy in theirs, and we admit that it is our own fault that we do not also enjoy them."

"Resolved, That, in our opinion, the institutions originally and primarily designed to meet the wants of the professional classes as such, can not, in the nature of things, meet ours, no more than the institutes we desire to establish for ourselves meet theirs; therefor,

"Resolved, That we take immediate measures for the establishment of a University in the State of Illinois, expressly to meet those felt wants of each and all the industrial classes of our state."

These are historic resolutions because ideals of a great agriculaural education system were taking shape and were afterward brought to a practical realization in a bill establishing the Agricultural College of America.

In commenting on what a University should be, he made the following remarks almost three quarters of a century ago:

"Let analogous experiments be tried on all the varied products of the farm, the fruit-yard, the nursery, and the garden; on all modes of crossing, rearing, and fattening domestic animals, under various degrees of warmth and light, with and without shelter; on green, dry, raw, ground, and cooked food, cold and warm; on the nature, causes, and cure of their various diseases, both of those on the premises and of those brought in from abroad; and advice given, and annual reports made on those and all similar topics. Let the professors of physiology and entomology be ever abroad at the proper seasons, with the needful apparatus for seeing all things visible and invisible, and scrutinizing the latent causes of all those blights, blasts, rots, rusts, and mildews which so often destroy the choicest products of industry, and thereby impair the health, wealth and comfort of millions of our fellow men. Let the professor of chemistry carefully analyze the various soils and products of the State, retain specimens, give instruction, and report on their various qualities, adaptations, and deficiencies." * * *

"As regards the professors, they should, of course, not only be men of the most eminent, practical ability in their several departments, but their connection with the institution should be rendered so fixed and stable as to enable them to carry through such designs as they may form, or all the peculiar benefits of the system would be lost." * * *

"I see an omen for the future in the present gathering. I remember well when we could not get out a single farmer at a convention for this purpose, though repeated calls and drumming had been made, and though the convention was held at the capital during the session of the Legislature. The world moves, Mr. President. If I might be allowed to use a homely farmer's simile, while sitting in my own dooryard, I have seen the immense droves of Missouri cattle coming by, and as the heavy, clustered tramp of the pawing, bellowing herd came near, all left their irresistible, onward path; and so now I feel, when I see the farmers coming up in masses, bent on the accomplishment of an object—I feel the presence of a mighty, irresistible power."

That statement could come only from a prophet. Further comment is unnecessary because we all know what the agricultural college has meant to America during the last three quarters of a century. The agricultural college has done its job well, but in the minds of certain people it was not planned to reach down to the masses and possibly should not attempt to reach down into the intermediate grade. It was clear that some agency should do this, so in 1917 a bill was passed by Congress known as the Smith-Hughes Law, a law providing for the promotion of vocational education. The farmers had in mind, of course, the placing in every community of a school which would do for the local district what the college could do only for the state. What a wonderful opportunity the Agricultural College, cooperating with the Smith-Hughes schools, has for good in Illinois if we keep our "feet on the ground and our heads on our shoulders".

Now is not a good time to be switched from the trail. We will have discouragements, but if we meet them they will make us strong. Witness the following from Turner's pen in a moment of discouragement:

"My dear friend, after forty years of almost incessant effort in behalf of the true principles of freedom and education, I have settled down into the comfortable conclusion that if Almighty God, possessed of omnipotent power, don't care anything about them, I do not, and I am not going to run over the State any more, trying to raise them up, while He leaves the devil and the conservatives and the copperheads in solid phalanx to fight against me. Most true, I would like to see our own State, Illinois, take a deserved lead in this great matter. But if neither the Lord nor the people care anything about it, who am I, that I should fight against God and the people too! Let Champaign and Chicago and the devil and "befooled Egypt" take the inside of the ring, if that be the Lord's will, although it is none of my will. For myself, I am conscious of only one great immaculate virtue in me: I bow submissively when I can't help it, and nowhere else." * * *

"It will probably take a thousand years for a single one of these great free states to learn to endow and manage these industrial universities in the best possible manner. But what of that? Shall we never attempt to learn the greatest of all possible arts—the preparing of our American youth for a true American life—because our art is difficult and our lesson a long one? I shall soon die; you will soon die; we shall all soon die; but these institutions will live—still live to learn their art and their duty, and to help the race, long after the oaks have grown, and fallen again, and rotted over our graves." "The cause of agricultural education is winning, it could not fail. It is too vital a thing to fail."

You men are surely to be congratulated on being of that fraternity of agricultural high school teachers. There is no body of men anywhere who have greater responsibility. It is a privilege to be leaders of the American

youth today. It is an opportunity but along with all great opportunities come great responsibilities, and with great responsibilities there is always hard work for responsibility implies work.

Today I am not old in the teaching profession, tho having preceded most of you from ten to fifteen years, but possibly something may be said which has been gained during this period which will be helpful.

Naturally the first idea which comes to my mind is the man. What are his qualifications? First, is he a man who loves the farm, farm life? Does he understand the problems which are constantly facing farm people? Can he see these problems before the people see them? Is he a general who takes the field ahead of his army? Is he a man who can divert thought from radical channels to the right avenues? Yes—That must be the answer.

Along with these qualifications largely born with the teacher, what has been his training? No teacher can consider himself trained who has not had basic courses, thoroughly studied, in

1. Physics
2. Chemistry
3. Bacteriology
4. Botany
5. Zoology

These courses are the very gateways to a rich understanding of all life on the farm. It is assumed without comment that the student has further fitted himself by taking fundamental courses in Animal and Plant Production as well as farm management. And then as a training for the business and social side of farm life, a teacher must be unhappy if he has not a broad training in

1. Geography
2. History
3. Economics

Yes, I am aware of the fact that four years is insufficient time to gain a good working knowledge of all these things. That's not the point. After college is the time. The day is rapidly passing when the world asks only, where did you graduate, or under whom did you work. More and more emphasis is being placed on, Is he growing? Is he keeping pace with the times? Does he keep abreast of the new literature and of the new discoveries of his time? Let me make a plea for added emphasis on the last. Let's keep up with the times. It is easy to get into the "rut".

No, I should not be fair if I did not call your attention to the great importance of reading outside the fields specifically mentioned above. My mind rapidly passes over the story of the lives of men. These stories are called biographies. Nothing in the training of a young boy means more than the history of achievement of such men as Dodge, a merchant prince, or Rus, the carpenter's son. What is more encouraging than to read of a great fighter for justice? Can you men, any of you, when you meet a man blue and down cast, tell him the story of Ali Hafeds F? Sometime take out a little time and read "Acres of Diamonds", the book which made its author rich, besides enriching the lives of more people than any other book except the Bible.

Not long ago a Smith-Hughes teacher said his community gave him no inspiration. That is unusual. To me no group of people is more inspiring than a community representing our great community high schools. The people composing this group are as fine a lot of people as God ever let live. It makes no difference how expensive the wireless outfit, it must be in tune or it will record no message. So it is with the teacher. He must be in tune or else his community can give him no message of growth and encouragement. When approached in a spirit of sympathy, they accept leadership and help from the teacher.

Specifically, what should the Smith-Hughes teacher do? Should he determine soil acidity? Should he determine the moisture content of corn? Should he run nitrogen for the farmers? Yes, if they are the big things. In doing these things they should, it seems to me, be a means to an end. That is getting the confidence and good will of the farmer. Are these things enabling the teacher to teach principles of life aside from some direct practical help? In one community one kind of service is desirable, while in another something else would be best. Here it is the soil; there poultry; and again, fruit, etc. What should we do in order to get folks to look "outward, upward and onward"? Again quoting Turner:

"One capital and fatal error has been the idea that we should send a boy to school to learn to work, and not simply to learn to think; thus absurdly attempting to teach, by public endowment and munificence, the little arts of personal manipulation, instead of the magnificient science of universal success. Nothing could be more fatal. When I have taught a boy merely how to hold a plow, I have only taught him to be a two-legged jackass, twin brother to the four-legged team in front of him. But when I have taught him truly and scientifically, all the mighty mysteries of the seas, stars, oceans, lands, and ages that are concerned in that act of plowing, I have made a man of him—had we not better say an angel? Art, in the sense of mere labor, mere servile imitation alone, is only animal. But true labor, inspired by universal science and intelligence, is not only characteristically human, but also divine. What could be more absurd than to take a hundred boys, in their teens, away from their parents, the year round, and set them to dabbling with a hundred teams for a few hours per diem, half of which break their traces and run away the first hour, under the absurd pretext of teaching these boys how to plow? When Almighty God created the heavens and the earth, and ordered man to eat his bread by the sweat of the brow, He created, and most likely endowed, the best possible university for learning all such mere manual acts; and if we expect to supersede Omnipotence by grants of land for endowments, it will prove worse than a Bull Run defeat; for no institution for teaching the arts and the habits of bare manipulation and industrial skill can ever be endowed at all comparable with those which the great Father of all has most munificently spread abroad over every household, every shop, and every field, throughout the civilized globe. The principles of science, therefore, and not the bare manipulations of art, should be our guiding lights."

Always it seems to me the class work is the chief center of activities and anything less than the best here is a mistake. There seems to be no limit to service which can be rendered to the individual as well as the group by the project method. It is such a practical way of teaching "principle along with practice".

My attention has been called at times to cases where the Smith-Hughes teacher is not cooperating with the farm adviser. This is unfortunate because under such circumstances neither party can render full service.

Let's guard the gate before something very valuable goes astray. It would seem that we all must start a somewhat new and unblazed trail—that of co-operation. For you will all agree with me that the greatest need of farming people is that everlasting "stick together spirit".

Let me, before closing, bespeak your cooperation in carrying forward the ideals of the University for they are sound. I know of no body who can be of greater service to the University than you. Helpful criticisms are desirable always. Such men as you, out in the field, can see things which might never appear as so important here.

As we look into the future, let's seek wise guidance through careful thought in shaping our agricultural policies, educational and economic. The best we can do is required if we save American farm life from a peasantry. Our watchword should be: What is best for my country, my state, my nation and for all humanity.

(No report has been received on the paper given by Professor Muckleroy nor on the round-table discussion of the morning.)

Afternoon Session

Meeting called to order at 2 o'clock. The report of the nominating committee was given.

The nominating committee felt that both southern and northern sections should be represented in the new members of the conference committee of the Agricultural Section; Professor R. E. Muckleroy of the Southern Illinois State Normal College, and Mr. George H. Reid of McNabb, Illinois, were named to take the places of Mr. A. W. Newlin, Casey, Illinois, and Mr. D. L. Reid, whose terms expired this year. The nominations were acceptable to the section, and the motion was duly made and passed.

The chairman, Mr. I. E. Wilson, asked that the committee take steps at once towards the next year's program.

Mr. Carl Colvin, State Supervisor of Agricultural Education, explained some of the things the state office has in mind in marking off the state into ten sections. He said that Bulletin 25 would be of interest in this connection. Suggestions which have come to Mr. Colvin from various sections of the state show that a need for closer cooperation is felt in this field of work, partly because the work is rather new; that is, new compared with the whole educational system, for it is only five years old. There are many problems in the field of agricultural education, and many of them are not professional problems, but administrative ones, in which superintendents of schools are very much interested. A sectional meeting at least once a year, which might be

attended by all those interested in agricultural education, is proposed. Discussion in these smaller groups seems more practicable, and more apt to produce results; it will be more able to lead to some conclusions concerning the problems in the way of successful agricultural work.

The chairman introduced a discussion of the possibility of sectional judging contests. One of the members stated that he favored the plan of sectional judging contests, for by this plan no one could complain of not having representation and it would be a preparation for the state contest, and would in many ways facilitate the state contest. Mr. Colvin asked the members if they would be willing to leave this matter to the executive committee? The question was raised as to whether or not any one community could supply animals for all classes, and whether or not the students would not have judged them before. The suggestion was made that there is difficulty already in getting the boys to form a team, and that the trip to the state university is sometimes an inducement for them to do so. For this reason the district plan might not work out so well. Also, the more boys coming down to the university on these judging trips, the more will come eventually, and the sectional contests might keep some away from the state contests.

An inquiry was made as to the number of teams entered in the contest last year, to which Mr. Colvin replied that there were sixty-seven teams including both contests, or forty-nine separate teams. It then appeared to the member on the floor that since there are one hundred and thirty-two Smith-Hughes schools in the state, there ought to be more represented in the contests, rather than the small percentage at present. Taking part in the contest at Urbana means a long trip to some, and by having sectional contests at least one hundred schools could probably be brought to take part. Also, the sectional contests could be a culling process for the state contest, and might get the boys grounded in the spring for the real judging in the regular summer contest. Mr. Colvin suggested that this topic be discussed in the sectional meetings, and that it be tried out in various sections, and if proved satisfactory, adopted. However, the question was raised as to whether there would be any real reason why any team should be eliminated from the state contest. This was referred to the sectional meetings again, and the importance of the discussion of administrative problems in these sectional meetings stressed. "These administrative problems are partly local and we will get further in both general and local fields if discussion of administrative problems is made in sectional meetings."

Professor A. W. Nolan led in a round table discussion, placing before the assembly seven problems for discussion. These problems were given before Mr. Blair's speech, and discussed afterward, being taken up as chosen by the members.

Mr. F. G. Blair, State Superintendent of Public Instruction, and Executive Officer of the Board for Vocational Education, spoke on

the subject, *"Earmarks on the Future Program of Vocational Education"*. He said that when he was on the farm, he remembered only one kind of animal which bore earmarks, and that was the one which occupied the stye. There is a feeling that vocational education is just that kind of animal, but vocational education should not be characterized in that way at all. It is up to the teachers of agriculture to show that they are good fellow workers, and that they have no desire at all to emphasize unduly the subjects which they teach. Vocational education is not earmarked. One of the detriments of vocational education in the past was that it bore earmarks. There was a time when if it did not bear the earmarks of trade unionism or the earmarks of the employers, then neither would have anything to do with it. There was a fight in Illinois to set up vocational education without the earmarks of either. Vocational education should have only one distinguishing feature. It should be a part of the great educational scheme, a part of the great unfolding of the girl or boy. Spartan education had certain definite aims, and these were followed faithfully. Athenian education was a complex matter, surrounding the boy or girl with all the richness and variety of education, and if there was a talent there, they believed it would come forth. The Spartans trained their boys to be soldiers, but the Athenians when meeting them on the battlefield, were the victors, because of a superior elasticity in action. From the complexity of their education they were able to adapt themselves to any situation better than the Spartans. Instead of following the Spartan plan, we must follow the Athenian plan and make vocational education part of the great life development of an individual. One of the great objectives of education is to teach boys and girls how to get joy out of living. If we arouse desires without teaching the young people how to satisfy them, we cultivate a radical danger. These vocational subjects may be made the means of satisfying the desires which we have awakened; but if we teach them as if they are only of monetary value, we shall not get very far. We must give the young people pride in their work, enjoyment of its performance and the possibility of its artistic value. To do that we must begin at the skyline.

Superstitions such as some of us heard in our childhood about farming, such as the necessity of employing a water witch to find a well site, cannot make a good skyline. Today the questions of science are interesting the farmers. If vocational education is to have earmarks, then one of them will be giving the right kind of skyline to the work. It is quite true that support of family may make a sufficient skyline for many a worker, and one of the most serious menaces of today is that men do not have sufficient means to make a living. But the skyline and improved methods of work may surely go hand in hand.

Too much of the school teaching of yesterday, perhaps was handing out vest-pocket information, but today we need just a little more

than that kind of thing. It is true that subjects studied must be given scientifically. There are too many situations arising where information of this kind is needed and not available. If we give that, we shall be aiding the student in one of our primary purposes,—to live well. If we give the student the facts by which he may get down to the practical needs of earth, and give him the viewpoint and inspiration by which he may touch the skyline, we shall have succeeded in our work.

Round Table Discussion

The problems placed before the assembly by Professor A. W. Nolan were:

1. Plans for the daily recitation.
2. Problem of supervised study.
3. Making the laboratory work count.
4. Self improvement for the teacher of agriculture. (In Massachusetts every teacher must set up some improvement project of his own.)
5. Placing the proper emphasis upon:
    (a) The manipulative process.
    (b) Scientific principles.
    (c) Socializing values.
6. Making the most of the farm visit. (Supervised practice.)
7. My (each teacher's) success in the four points of the state program:
    (a) The project method of teaching.
    (b) The community work.
    (c) The farm shop.
    (d) Farm accounts.

The first question taken up for discussion by the consent of the assembly was that of the requirements in farm shop. It was the impression of one member that the University favors the educational side and the state favors the apprentice side of the work. He desired to know what should be the proper attitude in farm mechanics. Mr. Colvin explained that a mistake has been made in some of the schools of the state of entering a course in farm mechanics and labeling it manual training. This has led to confusion, because the university must then demand that these courses meet the requirements of the course in manual training as laid down in their pre-requisites. The course in farm mechanics should be taught as the third year in agriculture, and properly named.

The next question was that of making the most of the farm visit. Mr. Nolan stated that he was making a study of this phase of the work this year, in which he recognized that here the instructor is con-

fronted with a new teaching situation. The old situation of the classroom recitation is decidedly different from that which faces the teacher in agriculture when he goes out on the farm with the boy in the presence of his problem, perhaps with the father along, and it calls for a new kind of pedagogy. If there were some first class examples of this kind of teaching, in sufficient number, perhaps the fundamental principles of this new pedagogy might be induced from them.

Mr. Blair said that he believed the visit to the farm should have two objectives in view; first, taking the farm as the producing plant, and trying to improve it along that line; second, taking the farm as the place to live, and bringing inspiration to the workers along that line. One of the teachers present stated that it was his experience that it is best to talk over any of the farm problems which are brought up by the boy or his father, and which they seem to wish to discuss, no matter whether these problems related directly to the original purpose of the visit or not, and if there is not time for both, talk over what they want to and come back another time for the project. Instances were cited by other members where they had followed this plan and found it very satisfactory in improving the understanding between the instructor and the boy and his family, and the condition of the farm.

In connection with the discussion of the farm visit, one of the members present described a condition which he faced in the home of one of the boys of his class, where ignorance, poverty, and a general low level of life made his work difficult. He has persuaded another man than the boy's father to help pay the boy's way through school. Thus a touch of the socializing aspect of the farm visit was brought out.

At this point Mr. Blair asked about the cooperation of teachers of agriculture and the county farm advisors, and was assured that there is a most hearty cooperation existing between the Farm Bureau and the Smith-Hughes men.

The question of a program for his short course work was brought up by an instructor who was puzzled to know to whom to direct his course, the younger boys, the boys who had had no schooling, or the adults. Mr. Nolan advised him to begin with the younger boys, and said that in that way the information would be disseminated among the older ones. He also advised having one or two special occasions for the older people. Mr. Nolan's view is that the first duty is to the people in school, next to the older boys, and last to the older men. Personal interviews may also help to take care of the older men. The value of practical ability both in this work and in the farm visit is very great when it comes to gaining the confidence of the men and boys.

Mr. Colvin introduced Mr. Broyles of the University of Pennsylvania, who expressed his pleasure in being present, and commended the cooperative spirit of the Illinois men.

Topic number two was taken up, "Problems in Supervised Study". In Illinois the agriculture teachers have ninety minutes allotted for the work. The methods most generally agreed upon were question outlining, occasional group discussion, and preparation after the class recitation, for the next day. It was not deemed advisable to go over the work with the group and have immediate discussion as a class recitation following. It was agreed that the teacher should not only be present at the period of study, but should be actively engaged in helping the pupils, otherwise the study would not be supervised study at all, and any other teacher might well take the agriculture teacher's place.

Business

After the discussion, there was an explanation of the movement to affiliate the state organizations into a national organization which should be connected with the national educational organization, and a proposal to send a representative to the meeting at Detroit, from the state organization, paying the expenses of such delegate from the treasury. It was moved and seconded, that "Illinois Agricultural Association send its president to the Detroit meeting to represent the State association in the National Vocational Education Association". The motion was carried.

The executive committee of this state association has been given duties. Mr. Colvin is coming to the association to sense the opinions of the teachers in the field. It is suggested that the stock judging contest matter be left to the executive committee; the committee wants to adopt that method which is satisfactory to the greaest number of teachers. A unanimous assent was given to this plan as suggested by Mr. Colvin.

The matter of dues was also taken up, and members requested to see that these were promptly paid.

Mr. Colvin remarked that there had been a number of requests coming to his office recently asking for reports, and especially Bulletin 18. Bulletin 18 will not be sent out until asked for, as the state office is not sure how many are needed, but is glad to send out these copies when requested. If more copies of Bulletin 25 are needed by the teachers to distribute to members of their Boards of Education or if they think that they can do some good by distributing them to members of a neighboring school, the state office will be glad to mail more copies to them. Mr. Colvin also remarked the fine spirit of cooperation which the executive committee showed in coming to Springfield for conference.

Mr. Blair was much pleased with the sectional discussion plans.

Before the meeting was dismissed, the chairman called attention to the emblems of the association.

3. BIOLOGY SECTION

The meeting was called to order by the chairman, Clarence Bonnell, Harrisburg, Illinois. W. C. Croxton, University High School, Urbana, was asked to act as secretary. After a few brief announcements the program was carried out as announced.

Science in the Elementary School
By J. H. Whitten

AIMS

The report of The Commission of The N. E. A. on reorganization of curricula declares the aims of public school education to be as follows:

Health
Command of fundamental processes
Worthy home membership
Vocation
Citizenship
Worthy use of leisure
Ethical character

There is nothing particularly new or revolutionary in this declaration. It is rather an expression of the ideas that have been in the minds of students of education for some time and consequently it has been received with almost uniform approval. Teachers are, as a rule, willing to accept these aims as the guiding principles of curricula construction. Science teachers are wholly unable to understand how such a program can be realized without a much more liberal use of the educative material of science than has been common in the past.

General Science has come to mean *a study of environmental science from the viewpoint of the immediate interests and needs of the children.* There is no doubt among teachers familiar both with the educative values of science and with the elementary school but that such a study should begin in the first grade and continue regularly and systematically through the entire course.

The objectives to be accomplished by such a course, stated specifically from the viewpoint of science but at no point conflicting with the report of the commission are:

1. To establish health habits based on direct knowledge of the controllable factors influencing personal and community health.
2. To provide worth while experiences, common to a particular group, on which to base practice in oral and written composition, reading, art and number work.
3. To make a direct study of the scientific processes and appliances on which the well being of the modern home and community are so largely dependent.
4. To help boys and girls who have strong scientific interests and abilities to "find themselves."
5. To preserve and develop the tendency common to childhood of direct investigation of the problems of economic, political, social and religious life.
6. To entice boys and girls to the great natural out-of-doors and to enable them to appreciate and to enjoy what they find there.
7. To impress boys and girls with the fact that the study of science is a search after truth and that intellectual honesty and openmindedness are prime factors of permanent success.

Methods

The *Method of Science* in the elementary school should be interpreted as being synonymous with *the direct experience method of learning.*

Much has been said about the educative value of science in that it affords an opportunity to train students in using a method of procedure which is valuable not only in solving the problems of science but in attacking all the problems of life scientifically. It is quite possible, however, for students to take course after course in science and still be wholly without the scientific attitude of mind or the ability to formulate rational conclusions from available facts. The chief reason for this failure is the fact that the Method of Science is seldom used in teaching science. The extremely formal organization of schools, forces teachers to handle large numbers of children and to change from group to group and from subject to subject within short periods of time. In order to fit into the situation and to make any showing of accomplishment teachers will place the materials to be studied or the apparatus to be used before the students, tell them specifically what to do and to see and indicate the results expected within a definite time. Close watch is kept to prevent any one from making a mistake and little or no opportunity is offered for uninterrupted work and reflection. Laboratory guides or other leading questions and suggestions frequently make it possible for students to get the desired results without the sustained effort and the logical processes of mind which the Method of Science presupposes.

The zero point in science teaching is reached when pictures, books, stories, poems, or remote experiences more or less fictitious are substituted for the things being studied. Books, pictures and the others have a true and valuable place in science teaching, but never as substitutes for the materials of science instruction.

Obviously, the defects in teaching science inherent in the present school organization can not be overcome entirely. They are mentioned here to suggest that they be guarded against as much as possible, but when the substitutions referred to above are made then true science has disappeared and the name of science should be dropped.

No characteristic of childhood is more conspicuous than the tendency to investigate. Curiosity to learn by direct experience and a wholesome disregard for authoritative instruction are sure indications of scientific instincts. These instincts properly developed and regulated are fundamental to a scientific mind. They can be and frequently are squelched both at home and in school. Children may be forced into a routine which eventually causes them to be entirely satisfied with second-hand experiences. This is an indication that the scientific spirit has departed.

The scientific attitude of mind cannot be developed directly by discussions on what it is and how it functions. It is rather an indirect product of logical methods of study. It can become habitual by use only. The amount of use in any particular case will always depend on the capacity of the individual.

The necessary steps in solving a problem by the Method of Science are as follows:

1. Recognition of a problem
2. Formulating a working hypothesis
3. Making plans and assembling materials for testing the working hypothesis
4. Collecting and recording results.
5. Interpretation of results
6. Conclusion based on the results obtained
7. Application of what has been learned.

A Brief Analysis of the Above Steps

Problems in science arise from a desire to know and to do. They are of two main types, namely: the observational problem and the experiment. The former is a problem to be solved by observing an object or a process under natural conditions including natural environment. An experiment is a test applied to an object or to a process with all the factors influencing the result under control. The present organization of the elementary schools makes many "field trips" for regular and systematic observations impossible. To overcome this difficulty teachers have adopted the method of bringing the materials to be observed into the school room. Much really good material lends itself readily to this method. Two prominent facts which teachers using this method should always keep in mind are: (1) That the children and not the teacher only need the experience of collecting the material; and (2) When a thing is studied in the school room only there is always the danger of the inability of the children to recognize it when seen in its natural environment. Experiments are especially well adapted for school exercises. They are limited only by the time available and the materials necessary to make them.

Ability to recognize problems requires native curiosity, mental alertness or eagerness to learn new things and better ways of doing commonplace things. If children are given half a chance they will suggest many problems worthy of being solved either by individuals or by the class. The chief function of the science teacher is to suggest problems suitable for the children to solve and to interest them in working out the answers by observation and by experiment.

The Working Hypothesis is a tentative theoretical solution of the problem. It is the answer to the question "What do you think the answer to the problem is?" or "How do you think the problem can be solved?" This step is a fundamental part of the Method of Science, but unfortunately between text books and teachers children are seldom given an opportunity to do this very choice bit of thinking. It takes a little time to be sure; but if the teacher adheres steadfastly to her inherent right of summarily rejecting the impossible and the thoughtless the time will be well spent.

The working hypothesis is as essential to making a batch of mud pies as it is to discovering the cause of cancer. Children do not recognize the mental process by that name nor is it essential that they should, but it always precedes independent action no matter how insignificant the act may be.

The process requires creative imagination, originality and the ability to use present knowledge in predicting results in a new situation.

The Plans and the Materials needed are frequently implied in the working hypothesis although the two phases of the method are quite distinct. The hypothesis is largely a product of the imagination, while the plans and materials are very definite realities. Investigators whether children or adults are at this point brought very forcibly to earth and are held there by facts.

Some advocate that all materials needed for elementary school science should be gathered in from the byways or to be constructed by the teacher and pupils. There is no doubt but what much of it can be so provided and that initative and originality are strongly exercised thereby. It is a great handicap, however, to have to depend entirely on home made stuff. Many legitimate problems are thereby excluded, much time is wasted, and poor results obtained. Those who are familiar by actual contact with the work in the elementary school believe that a few of the fundamental pieces of apparatus should be provided for the school and that there should be a fund available for buying materials needed from day to day in the science classes.

Collecting and Recording Results. This step provides the evidence in the case. If any phase of the method can be said to be more important than the others, it is this one. All of the vast amount of scientific knowledge in the world has been accumulated by individuals keeping records of their obser-

vations and experiments. No scientist would think of doing any piece of scientific work without keeping records of his results and keeping records is just as important, educationally, in the first grade as it is scientifically important in the university. Accuracy, persistence, regularity and reliability are essential to success. There is a very high standard of ethics among scientific workers and it should be just as high among children in a class room. A scientist, big or little, who "doctors" the results of an experiment or who reports an observation as his own which either never happened or which was not made by him is not entitled to the respect of his associates. There is much evidence that dishonesty becomes habitual in many class rooms as a result of making the "right answer" or the "finished product" the only goal regardless of how it is obtained.

There are many ways of keeping records in science. In the lower grades paper tearing or cutting and clay modeling accompanied by a chart on which the teacher writes the reported observations of the children, are excellent ways of keeping records. Such records may eventually be printed, and in so doing they become valuable in correlating the science work with other school activities.

The camera is almost indispensable in nature study, and when supplemented by the lantern and the motion picture, the camera becomes very valuable for recording and preserving what has been seen. The camera will not lie, but, alas, the same can not be said of all who operate cameras. The great danger of pictures is not that the eye can be so easily deceived, but that pictures will be substituted for observations instead of supplementing them.

In the upper grades nothing has been invented that will take the place of the loose leaf science note book which is so well adapted for free hand drawings, graphs and notes. That the science note book has been very badly abused is no reason for eliminating it. To eliminate the abuses would seem more rational. There is considerable evidence now tending to prove that the free hand sketch or diagram quickly tho carefully made contributes quite as much to the learning process as the elaborate, time consuming drawing. The science note book is a *means* not an *end* and *how it has been made* is of as much importance as *what it contains.*

Copying pictures from books or charts may be legitimate at times in preparing a lesson, but it is not laboratory work and it is not a legitimate use of laboratory time.

There is only one time to record an observation and that is at the time it is made and such a requirement is perfectly consistent with both neatness and accuracy. "Doing it over" outside of class is a bad habit and often it is much worse than that, while writing up a note book to be "handed in" is worse than no note book. The socialized note book has no place in science.

Interpretation of results requires an explanation of *why* things happen as they do. The facts collected must be analyzed. The observed results must be traced to rational causes. At this point the personal equation enters the method. It is common for different students to get the same results from observation or experiment but to interpret them very differently. For this reason a single problem in science may start an endless chain of other related problems before the correct interpretation of the original problem can be made. A reputable scientist does not expect to have his results questioned, but he knows that he must be prepared to defend his interpretations at any time. "How do you interpret that?" or "Why does it act that way?" are questions which should be asked of children over and over again.

A *Conclusion* to a problem in science is a judgment based on the facts observed. If the working hypothesis is correct the conclusion should give the answer to the problem. If the hypothesis is not correct a new one must be formulated and the whole process repeated. For this reason the method of science is sometimes called the trial and error method. There is perhaps no other school exercise which provides an opportunity for pure synthetic reasoning such as do the conclusions to problems in science. If a personal prejudice

or a preconceived notion of any kind is allowed to influence a conclusion it becomes worthless. Students are often expected to form conclusions from insufficient facts. It results in getting conclusions from text book or teacher and leads to a common habit of drawing conclusions from a single fact which is always unscientific and dangerous. The scientific mind will always suspend judgment until sufficient facts have been accumulated on which to base a conclusion and is always ready to modify a conclusion in the light of newly discovered facts. Many a choice bit of gossip would be utterly ruined if the same rule were followed in social life.

Application of what has been learned requires that the new knowledge can be connected with the *need* which made the solving of the problem desirable. With those problems the aims of which are to gain control of the factors influencing health, or the activities of effective work or play, the problem is not really completed until the thing learned has been translated into action. Too often science instruction stops with the formal statement of the conclusion, whereas the chief purpose of such instruction is to place at the command of the student useful knowledge and experiences.

The old distinction between *pure* and *applied* science has very largely broken down. These ideas are now interpreted as merely different points of view of the same problem. It would be difficult to name any important scientific problem which does not have its practical applications. Science instruction must not be limited to a strict utilitarianism from the economic point of view, but certainly there is no place in the elementary school for work in science which is far removed from, or is only indirectly related to the realization of the aims of education as stated. Unless science teaching is so ordered that the applications to those aims are made a definite part of the student's working equipment for life science will fall short of its extremely important mission.

Materials—*Organization of Subject Matter*

Expert investigators in the various fields of science are very much concerned about the relations and inter-relations of natural phenomena. When these true relationships have been discovered the objects and processes of nature show a decided tendency to fit together and to form a perfect whole. In other words nature is very definitely organized and finely adjusted, and it is the ambition of the trained adult mind to discover the details of that organization. When once understood the facts of science classify themselves.

One of the chief factors operating to keep science out of the elementary school and away from the average person has been the fact that the natural or scientific organization of subject matter has nothing in common with childhood and makes no appeal to the layman, while the experts have been unwilling to accept anything else.

Children have nothing to classify and it is only natural that technical organizations of subject matter would seem dull and useless to them. The men who should have been much interested in public school science did not realize this fact until it became conspicuous that interest in science as it was taught in the public schools was on the decline, and that the average individual, the product of the schools, did not knew enough science to meet the demands of modern life.

Environmental Science, General Science, or Nature Study, all synonymous terms, and as previously defined in this discussion, promises to solve the problem.

The fact that general science has been placed in the high schools in many places can not be accepted as evidence that it belongs there. It would be nearer the truth to say that it is so placed because the elementary schools are not yet doing their full duty in the matter of science teaching. The object of this course is to put general science in the elementary schools where we believe it belongs.

Types of School Exercises

I—Exercises intended to establish habits.

The primary aim of practically all instruction having a bearing on personal and community health is to establish correct habits of living. In order to succeed instruction must begin as early as possible and continue until the object has been attained. Not only should all the teachers in all the grades co-operate in the common purpose, but all possible helpful influences outside of school should be enlisted in the work. At first the instruction may be by precept or rule accompanied by an appeal for good health and a strong body, but as early as possible specific knowledge through direct experience should show the reasons for the activities involved. A child may be taught to use a tooth brush or to fear the house fly long before he is able to grasp the significance of pyorrhea or typhoid. However, the aim of science instruction is to produce an intelligent control over health and this will not have been accomplished until the scientific foundation for the habit has been taught.

II—Exercises in which the product of the work done is the chief reward.

Examples of this type of exercise are: ? growing plants with which to decorate the school or home, installing an electric bell, conducting a fly campaign, etc. In order to obtain the best results from this type of school exercise a definite scientific procedure must be followed. The science involved should be taught step by step as the work advances. If this is done any particular exercise must be placed in the grade capable of understanding it well enough to get a satisfactory product. When once started at any particular point in the curriculum it may be repeated as often as there is a demand for the product. First grade children, properly supervised, can grow the Paper White Narcissus in an entirely satisfactory manner. Any or all succeeding grades should be allowed the same pleasure if the need for the plants exists. Pupils in the fifth grade should be able to plant a tree correctly and understand every step in the process. If started in this grade any following grade may plant a tree as often as conditions are favorable and the occasion arises. The skill gained by repetition and the additional knowledge of the older classes should show in better products in the successive grades.

III—Exercises intended primarily to teach a specific fact, process or principle.

The laws of the lever or of the magnet, the fact that air has weight, and the process of paper making may be used as examples of this type of exercises. The teaching may be either inductive or deductive. As a rule induction is better, i. e., it is usually better to discover a law by observing some practical application of it than to start out to verify a formal statement of the law. There are times, however, when to prove a fact or to verify a law is perfectly legitimate. The method of science applies equally well to either method of instruction.

Such an exercise should be taught but once and it should be placed in the grade where students are able to understand the work and there is a recognized need for the thing to be learned. The greater the need for the knowledge acquired and the oftener it is used either in the grade where it is taught or in succeeding grades the better it will be.

It has been found that mechanical toys are more useful in teaching certain facts and principles in the elementary school than the more formal apparatus much used and often little understood in high school and college.

IV—Exercises involving a progressive study of a general topic in which the materials and the intensity of the study are varied to suit the different grades.

Insects, trees, shrubs, weeds, wild flowers, cultivated plants, birds, and mammals are topics of this kind. There are phases of each that are excellently adapted to the lowest grades in the elementary school, and each is inexhaustible

even though the study be extended to all grades, continued through high school and college and made a permanent life interest.

The amount of work done on any particular topic must depend largely on the local environment of the school. Communities in which there are no trees available for observation and where a bird is seldom seen can not do good science work on these topics. The materials of some of the topics are well adapted to study inside the school room. The requirements of the school, the knowledge and the enthusiasm of the teacher, will determine what is done.

Best results with this type of exercise are obtained by building a course of study applicable to local conditions. Such a course should indicate definitely what is to be done by each grade and each grade should build on the work done in all preceding grades.

The Demonstration Method

A Demonstration is an experiment made or an exercise conducted by one member of a group, usually the teacher, while other members observe the results. No one questions the value of individual work when conditions are favorable for such work. There is an immense difference between seeing a thing done or being able to tell how it should be done and doing it. The large classes which teachers of elementary science have to handle and the limited time and equipment for such classes make individual experimentation on a common class problem impossible in a great many cases. The demonstration method is very often a necessity. Whether teachers make the demonstration or select a student or group of students to do so must be determined by the principle of the greatest good to the greatest number. The value gained by the student making a demonstration or a class report is very often much overbalanced by the poor grade of instruction received by the rest of the class. A skillful teacher may get much help from the members of a class in making a demonstration without surrendering control over class instruction.

What is known in pedagogical language as the development lesson is admirably adapted to working out many of the problems of elementary science. In this type of teaching all available resources are brought to bear on the work at hand, the class is held strictly to the problem and each individual has the opportunity of contributing all within his power. Problems solved by this gradual building up process are admirably adapted to familiarize children with a conscious use of the method of science. Without undue formality they can be directed through a problem step by step and made to see the order and the necessity for the successive steps. It seems safe to say that much of the work in the lower grades may be done well by this method. Investigations are now in progress to determine if the developmental method will yield as good results in high school and in the early courses in college as individual experimentation. The danger lies in the possibility of the quick student doing more than his fair share of the work while the slow but capable are excluded from a just participation. This must be guarded against, provided these classes of students really exist.

Note—At first thought teachers may condemn the method of science as formal and cumbersome especially with young children. A little training in scientific research or a careful analysis of the mental process involved in any independent action will remove such a prejudice. As a matter of fact the method follows the natural or logical process of learning. Children use it unconsciously; scientific adults, consciously. The baby who has learned that he can get what he wants by "throwing a fit" has done so by going through every step in the method. His applications are perfect.

The method is not advocated for *training* in a thing that has to be acquired but rather to develop and to make conscious a perfectly natural method of procedure. It is called the method of science only because it displaced

speculation about natural phenomena something over a hundred years ago and has ever since been consciously applied in all scientific work.

The most conspicuous movement in education in recent years is that other branches of learning are attempting to introduce the method of science. "Laboratory Method" is now in common use in other branches of learning than science and although the term is used more often than the method, yet it is an indication of the educational trend. Similarly, anyone who is not now teaching by *projects* is very much out of style. The term will run its course and be replaced in due time by the promoters of pedagogical fashions. The good accomplished, for it is accomplishing good, will be due to the elements of the method of science which it advocates.

Mr. Whitten also presented the following graded list of topics as suggestive of what may be undertaken in the elementary grades:

Specimen Science Topics Found Suitable for Grade Children

The following topics may be taught in any or all grades, provided the work is adapted to the grade where it is used and repetition is avoided.

I. The Human Body. Studied from the point of view of gaining an intelligent control over the factors influencing health. The following are the health habits advocated by the national bureau of education. 1. A full bath more than once a week. 2. Brushing the teeth at least once every day. 3. Sleeping long hours with windows open. 4. Drinking as much milk as possible, but no coffee; or at least four glasses of water a day. 7. Playing part of every day out of doors. 8. A bowel movement every morning.
Many other hygienic habits might be added. Unless the above habits are made rational at the earliest possible time it will be poor science.

II.	Wild flowers.		
	1. Identification.	2. Peculiarities.	3. Conservation.
III.	Weeds.		
	1. Identification.	2. Characteristics.	3. Elimination.
IV.	Trees.		
	1. Identification.	2. Importance.	3. Propagation.
V.	Shrubs.		
	1. Identification.	2. Decorative value.	3. Propagation.
VI.	Cultivated Plants.		
	1. Identification.	2. Uses.	3. Propagation.
VII.	Insects.		
	1. Identification.	2. Activities.	3. Control.
VIII.	Birds.		
	1. Identification.	2. Habits.	3. Protection.

Lower Grade Topics

I. Window Gardening.
   1. Grow bulbs by various methods.
   2. Grow geraniums, Coleus and Wandering Jew from cuttings.
   3. Plant seeds of common flowers, grains and vegetables. Keep records of growth and development.

II. Animal Pets. (Rabbits, guinea pigs, white rats, ring doves.)
   1. Feed and care for the animals in or near the school room.
   2. Observe and keep records of their activities.

III. Aquaria. (Fish, frogs, snails)
1. Learn how to keep the animals healthy.
2. Get the complete life cycle of the frog.
3. Balance the aquarium, and learn a few of the plants.

IV. Milk—In connection with a campaign for the "milk drinking" habit.
1. Make butter and cottage cheese as school exercises.

Intermediate Grade Topics

I. Landscape Gardening (Decorate home and school lot)
1. Learn from observation the types of planting schemes and the general principles of planting.
2. Grow shrubs from cuttings.
3. Plant and care for a tree.

II. Vegetable gardening.
1. Plan, plant and care for a home or school garden.

III. Soil studies.
1. Observe soil in the making. 2. Determine the name of a soil by the sedimentation test. 3. Determine the percent of organic matter in a soil by the burning test. 4. Learn by experiment the effect of cultivation on soil moisture, and the movement of water through different types of soils.

IV. Seeds.
1. Make a collection of comomn seeds.
2. Test seeds for vitality, for the time of germination, for length of life.

V. Woods. Botanical and commercial aspects.
1. Collect and identify a number of common woods.
2. Learn from observation their physical properties and their uses.
3. Learn the decorative markings and their botanical significance.
4. Methods of sawing wood for commercial purposes.

VI. Fibers. (Cotton, hemp, flax, silk, jute)
1. Collect raw materials.
2. Collect manufactured products.
3. Learn the tests for determining the different materials.

VII. Paper making.
1. Make paper from linen cloth.

VIII. Simple Machines.
1. Study applications of simple machines found in the common utensils about the home and school.
2. Make or set up and use the different kinds of simple machines.
3. Determine the general principles of the machines.

Upper Grade Topics

I. Bacteria, Yeast and Molds.
1. Grow bacteria and molds on foods.
2. Learn by experiment the effects of sunlight on bacteria.
3. Learn by experiment the effects of heat and cold on molds and bacteria. Apply to cooking, canning and cold storage.
4. Learn effects of sugar and salt solutions on bacteria and molds. Apply to pickling and preserving.
5. Grow yeast and use it in making bread.

II. Plant Diseases.
1. Inocculate healthy apples from decaying apples: a. Without breaking the skin. b. By breaking the skin.
2. Collect specimens of sick plants (potato scab, bean anthraxnose, corn smut, etc.).
3. Learn methods of infection and control.
4. Practice sanitary gardening.

III. Milk.
1. Test milk for bacteria.
2. Pasteurize milk.
3. Test milk for sugar, starch and fats.

IV. Ventilation. (The properties of air) and Heating.
1. Prove that air has weight and occupies space.
2. Show by experiment that heated air expands and rises.
3. Examine and explain simple heating and ventilating schemes.
4. Learn to read and interpret thermometer and barometer.
5. Observe and explain: squirt gun (pump), siphon, bicycle pump, vacuum cleaner, fire extinguisher, etc.
6. Trace the air currents in school room with smoking punk stick.
7. Make a hygrometer. Learn how to read and interpret it.

V. Fuels, Sources and Characteristics.
Wood. Coal. Oil. Gas. Electricity.

VI. Lighting. Standard requirements and methods.
Pine knot. Candles. Kerosene lamp. Gas. Electricity.

VII. Photography.
1. Make a pinhole camera.
2. Dissect a cow's eye.
3. Study a camera.
4. Make and develop pictures.

VIII. Magnetism.
1. Observe common properties of a magnet and of the compass.
2. Make a magnet.
3. Demagnetize a magnet.
4. Magnetize a bottle of iron filings.
5. Break a magnet.
6. Make an electro-magnet.

IX. Electricity.
1. Take a dry cell apart. Learn the parts and their functions.
2. Install an electric bell. Explain how it works.
3. Set up and operate electrical toys. Learn the common language of electricity.
4. Study and explain the electrical machines and devices about the home. Make a telegraph set.
5. Do some electroplating.

OBSERVATIONS BY A CLASS OF FIRST GRADE CHILDREN ON A PAIR OF RING DOVES KEPT IN A CAGE IN THE SCHOOL ROOM. CARTER PRACTICE SCHOOL, CHICAGO

SUPERVISED BY J. H. WHITTEN

Zaidee M. Scanlon, Teacher *Abby E. Lane, Principal*

May 1
We have two doves.
One is a father dove.
One is a mother dove.

May 2
The doves love each other.
They bow to each other.
They kiss each other.
They comb each other's feathers.
They say, "Coo-ca-roo, I love you."

May 3.
The doves are in a cage.
They cannot get out.
They cannot get seeds.
They cannot get water.
It is fun to get things for them.

May 4
We will take good care of our doves.
We will not scare them.
We will feed them.
We will love them.
They will love us.

May 5
Hear our doves.
"Coo-ca-roo. Coo-ca-roo.
Good morning little girl.
Good morning little boy.
We want seeds.
We want water.
We want little stones.
We want clean paper in our cage.
Who wants to get them for us?"

May 6.
We found feathers on the floor this morning.
They are doves' feathers.
The doves are too warm.
Summer is coming.
They have too many feathers.

May 7.
We found little fuzzy feathers.
We found two big, strong feathers.
The little fuzzy feathers keep them warm.
The big strong feathers help them fly.
They are old feathers.
Maybe the doves are getting new suits.

May 8.
Father dove gets in the nest.
He hollers and hollers.
Then mother dove comes too.
They both sit on the nest all day.
The doves are very busy.
They tear up the paper in the cage.
They fly to the nest with it.
They put it where they want it.
We will get them some hay and straw.

May 9.
A dove took a bath this morning.
He puts in his bill first.
He likes it.
He jumps in.
He splashes around.
He gets clean and gets out.
He shakes out all his feathers.
He combs them with his bill.
He looks smooth as silk.
He is glad.

May 10
The doves laid two eggs.
We saw the eggs, May 10, 1921.

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May 24
The eggs are 14 days old.
One egg has hatched this morning.
We have a baby bird now.
He has yellow hair all over.
His eyes are shut.
His bill looks like a little duck's.
He cannot fly.
He cannot stand.

May 25
The baby dove is bigger.
He cannot get out of the nest.
What does he eat?

May 26
The little dove is fatter.
He moves his little wings.

May 27
The baby dove opens his eyes and bill.
He is fatter and bigger.
His father and mother must feed him.
How do they do it?

May 28
His father and mother do feed him.
We saw them do it.
Mother dove eats seeds all the time.
She flies up to the nest.
Baby dove says, "Peep, peep."
He puts his long bill down Mother's throat.
He does not need a bottle.
His father feeds him too.

May 29
Baby dove eats all the time.
He is bigger every day.
His feathers are growing now.
They are dark feathers.
His yellow hairs are on the tips of his new feathers.
He is weak.
He cannot stand up yet.
But he can move his head, and wings, and feet.

May 30
His father and mother are fusy feeding him.
He eats all the time.
He cannot get out of the nest yet.
He peeks out at us.

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June 2
The baby dove can stand to-day.
He stood on the edge of the nest.
He stood on teacher's finger.
He stretches his neck, and wiggles his wings and tail.

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June 7
The baby bird ate seeds to-day.
He likes to be fed by his father and mother.
They will not do it now.
He can take care of himself.
I wish I had him.

Discussions and comments following the report of the chairman of the committee on a proposed course in general science.

Alice J. Patterson, Normal University, Normal, Illinois, spoke briefly of the work they are doing in elementary science in the elementary school. Her account of the use of the silk worm in the third grade was most interesting. The fruit of a Christmas dinner is another point of departure which she uses for the teaching of elementary science. She stated that in the eighth grade, where the work is centered about landscape gardening, sixty dollars worth of shrubs have been ordered by the pupils for use in gardening their home grounds. Miss Patterson distributed printed copies of a suggested course in elementary science.

Brief Summary of Nature Study and Science Material for the Grades

First Grade

Fall

1. Introductory. (a) The home and who lives there. (b) The school room.
2. The yard at home and school; objects that make them attractive, trees, flowers, etc., identification and color study.
3. Gardens: Food, preparation for winter.
4. Seasonal changes. Special days: Hallow'een, Thanksgiving.

Winter

1. Health studies: Food, study of cow; clothing; cleanliness; air in connection with house project.
2. The Christmas season; study of Christmas tree.
3. Animals about the home, study of cat.
4. The yard in winter.

SPRING

1. Awakening life in yards: Grass, dandelions, tulips, crocus, trees.
2. The new season: Weather; wind, rain.
3. Birds; Grackles, robin, bluebird.
4. Gardens: Schoolroom gardens, out-door planting.
5. New life among animals: Hen and chickens.

Second Year

FALL

1. Gardens: Reports of home gardens; radish, pop corn.
2. Wild flower identification.
3. Trees: Two shade trees; fruit trees, special study of the apple.
4. Animals: The horse.

WINTER

1. Weather: Calendar showing fair, days, cloudy, etc.
2. The Christmas dinner; special study of fruits.
3. Animals in winter; dog.
4. Clothing: Sheep.
5. Health Studies.

SPRING

1. Trees: Review those studied, add soft maple, poplar. Tap maples and make syrup.
2. Gardens: Study of seeds, plant in school room and at home.
3. Plants in yard.
4. Animals: Birds; ducks and geese.

Third Year

FALL

1. Fall aspect of gardens: Special study of tomato with related industries, canning factory, transportation, etc. Flowers, seed distribution.
2. Preparation of insects for winter, woolly bear and other caterpillars.
3. Nut trees and nuts.
4. Planting narcissus bulbs for winter blooming.
5. Health studies.
6. Farm activities. Wheat project.

WINTER

1. Keeping warm in winter: Shelter; the house we live in, parts and materials, pioneer houses; fuels; clothing; stores that provide clothing.
2. Winter weather: Simple record; snow; sleet, ice; Direct Directions.
3. Birds that are with us in winter; Feeding birds.
4. Health studies.

SPRING

1. Gardens: Preparation for planting. Start tomatoes and pansies indoors; identification of vegetable and flower seeds.
2. Farm activities in spring; excursions.
3. Trees: Willows, boxelder; grow pussy willows from cuttings.
4. Animals: Cocoons saved from fall study; silk worms. Birds; outdoor observation, care of canary in school room.
5. Simple study of location of School buildings, streets, cars, etc.

Fourth Year

FALL

1. Gardens: Reports of home gardens; climbing plants; sweet corn and industries; sorghum or sugar cane project.
2. Home making insects, honey and honey bee, wasps.
3. Pod bearing trees.
4. Bulb gardening.
5. Health: Fall sports, slide, teeter, swing.

WINTER

1. Animal: Rabbit and other wild mammals. Winter birds.
2. Evergreen trees.
3. Dangers from fires, causes, putting out fires, etc.
4. Health: Winter sports.

SPRING

1. Garden: Plan home gardens. Plants whose underground parts are used for food, onion, potato. Start cotton seeds indoors; study tulip. Wild flowers.
2. Trees: Development of pod bearing trees; elms and blackberry.
3. Birds: Audubon Society; water for birds.
4. Gold fish, other fish.

Fifth Year

FALL

1. Gardens: Home gardens; study of annual flowering plants; habit of growth, parts, harmony of color, arrangement of bouquets. Study root crops.
2. Plants;Ferns, how propagated; Oak trees, identification of different species, uses, etc. Ash trees.
3. Grasshoppers and their relatives, study living specimens in terrariums.

WINTER

1. Health Studies: Body needs; foods; classes, sources, etc.; drinks; teeth and their care. The air we breathe. Home-made spirometer, ventilation, etc.
2. Simple chemistry of cleaning. Mechanical toys. Making and flying kites, windmills.

SPRING

1. Gardens: Indoor planting, home gardens. Seed identification; biennials, flax; strawberry project.
2. Continue fern and tree studies started in fall.
3. Animals: Watch birds through the nesting season. Make and put up bird houses. Circus animals, project.

Sixth Year

FALL

1. Plants: Garden reports; Cole crops, cabbage, cauliflower, etc.; flax; vines, annual and perennial; mosses.
2. Animals: Enemies of cabbage, etc.; and lichens, identification. Collection of tree fruits and seeds.
3. Animals: Enemies of cabbage, etc., spiders.
4. Sky studies: Stars, constellations, planets, moon.

WINTER

1. Health: Skin and cleanliness; muscles, exercise and rest; feet and shoes; simple treatment of germ hygiene and sanitation.
2. Winter sports, mechanical toys.
3. Sky studies continued.

SPRING

1. Gardens: Garden plans; plant succession; Vines; Soil of gardens, tillage and care.
2. Life in Water: Outdoor studies; aquarium project.
3. Spring aspect of fruit trees. Small fruits; Enemies of fruit trees and shrubs. Sky study continued.

Seventh Year

FALL

1. Plant life: Types to show different habits and characteristics Flowering plants: Composite flowers; the forming of a seed; fall perennials. Farm crops; wheat, corn, legumes. Weeds of locality.
2. Trees: Type forms; family characteristics; ornamental trees, care, etc.; fruit trees, comparative study, propagation.

WINTER

1. Machinery: Tools, etc. of home and school. Means of travel, engines; means of communication, telephone.
2. Soils, kinds, origin. Water in soil.
3. Soil, water and plants.
4. Health: Food supply groups; digestion.

SPRING

1. Plants: Raising plants indoors, trans-planting out-of-doors; window or porch boxes. Trees, flowers of shade trees, growth of trees; forestry, planting trees.
2. Farm crops: Seed germination; varieties of wheat, corn, etc.

Eighth Year

FALL

1. Animal life: Insects of gardens, fields, household, etc. Domestic animals.
2. Fungi: Mushrooms, bracket fungi, molds, parasitic fungi, smut, etc.; yeast and bacteria.
3. Plants: Propagating plants by cuttings.
4. Light and lighting. Lighting of home and school; kinds, etc. The human eye in relation to light.

WINTER

1. Water and water supply: Drinking water of home and school, sources, etc. Water and health.
2. Heat and heating: Methods of heating the school and home, fuels, sun heat and radiation, thermometer, refrigerator, etc.
3. Air: Movements, changes, currents, etc. Air and health.

SPRING

1. Animals: Poultry, types, breeds, care, etc. Birds: Bird groups, family, characteristics, etc.
2. Landscape gardening: Lawn, shrubs, trees, flowers, etc.

H. D. Waggoner, Western Illinois State Teachers College, Macomb, Illinois, emphasized the fact there is not time in the high school course to carry on long continued studies as that of the silk worm. For this reason the elementary science is essential before high school science can be well taught.

Report of the Committee on a One-Year Fundamental Course of Biological Science

George W. Hunter

The committee on organization of a year of biological science finds itself in consonance with the general objectives of the Committee on Reorganization of Science appointed by the N. E. A. These objectives have already been noted in Dr. Wilson's report as

Health
Command of fundamental processes
Worthy home membership
Vocation
Citizenship
Worthy use of leisure
Ethical character

The committee also feels in entire sympathy with the Health-Wealth-Association-Beauty objectives of Dr. Hollister's committee. High school science objectives should have in mind the efficient economic life of the worker, the home thinking voter and citizen, the happy well-balanced member of the social group.

Organization of science material has been in the hands of specialists. These specialists have not always had in mind the point of view of the child who works in the school. The subject matter does not always fit in with the interests of children. It is time that in the making up of school curricula we should come to recognize the child's point of view and his interests.

Some years ago one of this committee attempted to get reaction from a large group (almost 2500) of first year high school students in certain eastern cities on the topics in biological subject matter that they considered the most worth while. The questionnaire method was used, the subjects being first year students in small cities and large urban high schools in New York, New Jersey, Pennsylvania, Connecticut and Massachusetts. In general the following was noted. First, these students were interested in problems relating to the improvement of environmental conditions. Second, in problems relating to health; third, in problems relating to the working and structure of the human body; fourth, in problems relating to the economic importance of certain biological materials. Fifth, in problems relating to the interpretation of factors of their environment; sixth, in problems relating to the laws of efficiency and waste in the laboratory; seventh, in problems relating to an understanding and use health; eighth in problems relating to worthy citizenship.

To a lesser extent interest in the strange, bizarre and unusual in nature, interest in classification, and interest in evolution, were shown in the answers of these students. It was evident that a certain pragmatic philosophy underlies the reasons for a student's likes and dislikes in subject matter, and in the large number of topics mentioned as being interesting, the physiological aspect was always dominant over the morphological in the mind of students. Their minds are dynamic not static. These factors should be taken into account in the making up of any course in elementary biology.

In particular do we agree with the report of Dr. Whitten with reference to the method of science. We believe that so far as possible every child should become habituated in science method so that he may carry over this habit into his daily life and use it in his attack on the problems there. To this end we advocate the use of the problem and project method of the class in the laboratory, and in home work where practical.

In order to bring before the secondary school teachers of biology in this state, the convictions of the committee with reference to content, and in order to compare the present content of courses with that of the suggested one year course in fundamentals, the committee sent out the following questionnaires to the 190 representative high schools in this state:

Will the Superintendent or Principal to whom this is addressed please see that it reaches the Biology teacher of his school as soon as possible? In schools where several teachers give courses in biological sciences additional copies will be sent on request.

To the Biology Teachers of Illinois:

The Biology section of the Illinois State High School Conference is attempting to determine what materials should be included in a one year fundamental course in the biological sciences for all high school students. The committee which you appointed has prepared a list of what seem to them important topics. Kindly read this list, then fill out the blank which accompanies it. The committee will appreciate your assistance for its object is to aid science teachers. If there are additional topics which you consider essential please list them on a separate sheet.

A prompt reply in the enclosed envelope will aid the committee in bringing this matter before the meeting of the Conference in November.

George W. Hunter, Chairman,
Knox College, Galesburg, Illinois.

TOPICS SUGGESTED FOR A ONE YEAR FUNDAMENTAL COURSE IN BIOLOGICAL SCIENCES

I. Living Things in Relation to Their Environment

1. Factors in environment of living things.
2. Relation of plants and animals to factors of environment.
3. General functions of living things.
4. Ecological relationships. Some adaptations of living things.
5. Man's relation to his environment.

II. Inter-dependence of Living Things

6. Food relation.
7. Shelter relation.
8. Balance between oxygen and carbon dioxide in green plants and animals.
9. Symbiosis in its broadest sense.
10. Parasitism and its results.

III. Life Processes in Plants and Animals

11. Comparison of living and non-living things.
12. Chemical composition of living things.
13. Cell as a unit.
14. Properties of protoplasm.
15. Importance of chromosomes.
16. Division of labor.

IV. Green Plants as Living Organisms

17. Nutrition. Chemical and physical principles involved.
18. Relation of raw material.
19. The root as an absorbing organ.

20. The organs of use in food making.
21. Manufacture of foods.
22. Food stuffs and their tests.
23. Enzymes and their functions.
24. Absorption and transportation of foods.
25. By-products of starch making.
26. Food storage. Its importance to man.
27. Respiration.
28. Transpiration.
29. Oxidation as a means of liberating energy.
30. Excretion.

V. Animals as Living Organisms

31. Nutrition. Sources of food for animals.
32. Foods. Functions of.
33. Personal dietaries in relation to growth and maintenance.
34. Hygiene of feeding.
35. Economy in purchase and preparation.
36. a. Food adulteration.
37. b. Food and Drug Act.
38. Organs of digestion.
39. a. in Hydra
40. b. in Arthropoda.
41. c. in Man.
42. Enzymes and glands.
43. Absorption and circulation.
44. Blood making.
45. Cell nutrition.
46. Blood serum and serum therapy.
47. Organs of respiration.
48. Necessity of respiration.
49. Hygiene of respiration.
50. Assimilation.
51. Excretion.
52. Skeleton, muscles and motion.

VI. Responses of Plants and Animals

53. Simple responses to external stimuli.
54. Body control and habit formation in man.
55. Apparatus. Simple structure of nervous system.
56. Reflexes. Habits and habit formation.
57. Hygiene of sense organs.

VII. Reproduction in Plants and Animals

58. Reproduction in one cell plants and animals.
59. Flowers in relation to pollination.
60. Flowers and insects.
61. Seed formation.
62. Uses of fruits in reproduction.
63. Seed distribution.
64. Conditions necessary for growth of seeds.
65. Germ cells in relation to soma cells.
66. Reproduction in animals. Simple explanation.
67. Metamorphosis.
68. Life history of frog.
69. Development of seed.
70. Development of mammal.

VIII. Evolution.

71. Classification of plants, simple.
72. Classification of animals.
73. Meaning of evolution.
74. Evidences of evolution.
75. Man's place in nature.

IX. Man's Control of His Environment.

A. In Relation to Public Health.
76. Method of dispersal of bacteria and diseases caused by them.
77. Methods of destroying bacteria.
78. Protozoa in relation to disease.
79. Insects in relation to disease.
80. Other animals of direct or indirect importance in the generation of disease.
81. Methods of disease prevention by the individual emphasized.
82. Municipal sanitation.
83. a. Public supplies, milk, water, food.
84. b. City department in connection with Public Health.
85. c. Museums, schools, baths, parks, markets, etc., in relation to health and public welfare.

B. In Relation to Material Wealth.
86. Forest in relation to soil, water, plant, and animal resources.
87. Food producing plants and animals in their relation to the wealth of the nation.
88. General biological relations existing between birds and insects.
89. Protection of birds.
90. Laws, literature and governmental work in protecting forests, wild flowers, birds, fish and other animals.

C. In Relation to Improvement of Plants and Animals.
91. Factors in plant and animal breeding:
92. a. heredity.
93. b. variation.
94. c. selection.
95. d. hybridizing.
96. e. inheritance of unit characters.
97. Improvement of man through eugenics, sanitation and personal hygiene.
98. Biographical studies of some great biologists who have contributed to human welfare.

Topic No.	Taught in your school? (x)	Mark subject or subjects in which it is taught						In which year is it taught? If in more than one put X after each.				Is the subject in which it is taught	
		Biol.	Botany	Zool.	Physiol.	Gen. Sci.	Agric.	1	2	3	4	Required?	Not Required?
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Topic No.	Taught in your school? (x)	Mark subject or subjects in which it is taught						In which year is it taught? If in more than one put X after each.				Is the subject in which it is taught	
		Biol.	Botany	Zool.	Physiol.	Gen. Sci.	Agric.	1	2	3	4	Required?	Not Required?
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Date ..... Name of City and Name of School .....

Name of Teacher .....

Since the questionnaires were sent our relatively late in the year, the committee has found it possible to only make a rather brief report on the findings. One hundred fifteen schools answered the questionnaire and gave material that could be used wholly or in part. One hundred three gave answers that could be used in their entirety, although many schools seemingly did not entirely understand the purport of certain of the questions.

In considering the total number of schools giving courses in either elementary biology, botany, zoology, physiology, general science or agriculture, it was found that a surprisingly large number of the 98 topics cited in the fundamental couse of the committee were touched upon or made use of by the schools making replies. It is a significant fact that 84 topics out of the 98 were given by over 90% of the schools and that only three topics, which fell considerably below the others, were omitted from more than 33% of the schools. On the other hand, only two topics were given by all of the schools. These two were "The Cell a Unit" and "Flowers in Relation to Pollination." It is extremely significant, however, that the topics given by the committee were to a very large extent touched upon in most cases in more than one of the sciences given. Reference to the table which follows is of interest in this respect.

	Totals	Biol.	Bot.	Zool.	Phy.	G.S.	Agr.
I—Living Things in Relation to Their Environment.							
1. Factors in environment of living things	108	35	66	59	30	33	18
2. Relation of plants and animals to factors of environment	111	34	66	61	20	35	14
3. General functions of living things	103	29	53	51	28	29	9
4. Ecological relationships. Some adaptations of living things	103	27	61	54	14	9	7
5. Man's Relation to his environment	100	28	27	37	41	32	4
II—Inter-Dependence of Living Things.							
6. Food Relation	107	34	54	50	28	35	10
7. Shelter relation	94	29	40	47	20	31	9
8. Balance between oxygen and carbon-dioxide in green plants and animals.	113	29	66	44	21	42	10
9. Symbiosis in its broadest sense	96	28	46	45	6	16	8
10. Parasitism and its results	108	30	66	62	16	19	8
III—Life Processes in Plants and Animals.							
11. Comparison of living and non-living things	107	33	51	50	24	41	4
12. Chemical composition of living things	99	27	48	37	36	33	10
13. Cell as a unit	115	32	68	57	41	40	6
14. Properties of protoplasm	109	32	59	57	39	28	4
15. Importance of chromosomes	90	26	43	44	18	8	6
16. Division of labor	105	31	52	58	32	18	4
IV—Green Plants as Living Organism.							
17. Nutrition. Chemical and Physical principles involved	110	32	61	14	19	29	13
18. Relation of raw material	101	29	58	8	6	39	11
19. The root as an absorbing organ	112	34	72	3	1	38	13
20. The organs of use in food making	105	32	70	3	6	39	11
21. Manufacture of food	110	31	68	2	8	42	13
22. Food stuffs and their tests	108	28	59	3	26	43	7
23. Enzymes and their functions	108	31	58	12	27	29	10

		Totals	Biol.	Bot.	Zool.	Phy.	G.S.	Agr.
24.	Absorption & transportation of foods	112	31	74	14	18	16	12
25.	By-products of starch making	100	29	62	..	5	29	8
26.	Food storage. Its importance to man	113	31	71	6	14	38	11
27.	Respiration	112	31	73	15	9	38	12
28.	Transpiration	111	31	73	8	6	34	11
29.	Oxidation as a means of liberation of energy	110	33	65	17	20	38	12
30.	Execretion	111	32	63	22	23	28	12
V—Animals as Living Organisms.								
31.	Nutrition. Sources of food for animals	109	29	12	57	33	30	19
32.	Foods. Functions of	108	27	13	45	46	39	16
33.	Personal dietaries in relation to growth and maintenance	92	22	..	11	38	27	7
34.	Hygiene of feeding	94	20	1	13	42	27	9
35.	Economy in purchase and preparation	85	17	2	6	37	30	11
36.	(a) Food adulteration	84	18	2	3	41	26	9
37.	(b) Food and Drug Act	78	15	1	4	40	26	2
38.	Organs of digestion	108	24	7	56	36	23	9
39.	(a) in Hydra	92	23	4	56	7	6	..
40.	(b) in Arthropoda	96	23	5	56	10	7	..
41.	(c) in Man	111	26	6	40	48	31	2
42.	Enzymes and glands	108	23	5	46	50	29	10
43.	Absorption and circulation	112	25	8	50	51	30	12
44.	Blood making	108	21	2	34	47	22	6
45.	Cell Nutrition	98	23	12	46	49	24	3
46.	Blood serum and serum therapy	74	18	2	11	30	17	7
47.	Organs of respiration	111	27	17	60	53	33	9
48.	Necessity of respiration	109	25	8	54	51	36	8
49.	Assimilation	105	24	1	26	50	32	6
50.	Execretion	107	27	7	48	51	27	13
51.	Hygiene of respiration	107	26	6	55	49	22	9
52.	Skeleton, muscles and motion	108	26	4	54	52	21	5
VI—Responses of Plants and Animals.								
53.	Simple responses to external stimuli	101	30	47	56	35	22	4
54.	Body control and habit formation in man	108	26	3	15	57	17	2
55.	Apparatus. Simple structure of nervous system	101	23	3	36	54	14	1
56.	Reflexes. Habits and habit formation.	93	24	5	28	54	16	..
57.	Hygiene of sense organs	88	20	2	10	55	20	..
VII—Reproduction in Plants and Animals.								
58.	Reproduction in one cell plants and animals	113	31	70	62	23	28	8
59.	Flowers in relation to pollination	115	32	76	12	3	35	12
60.	Flowers and insects	114	31	75	40	2	33	12
61.	Seed formation	114	32	76	2	2	31	15
62.	Uses of fruits in reproduction	110	31	72	1	1	18	13
63.	Seed distribution	114	31	74	3	..	25	15
64.	Conditions necessary for growth of seed	112	31	74	..	..	26	18
65.	Germ cells in relation to soma cells	73	19	30	12	5	6	6
66.	Reproduction in animals. Simple explanation	108	31	2	63	9	18	13

		Totals	Biol.	Bot.	Zool.	Phy.	G.S.	Agr.
67.	Metamorphosis	109	31	2	58	3	14	5
68.	Life history of frog	104	30	3	64	3	11	3
69.	Development of seed	110	34	67	7	..	23	13
70.	Development of mammal	81	26	4	41	6	12	8
VIII—Evolution.								
71.	Classification of plants, simple	108	28	71	4	..	7	8
72.	Classification of animals	101	27	5	63	3	8	7
73.	Meaning of evolution	109	30	47	64	12	28	6
74.	Evidence of evolution	105	28	44	65	8	15	5
75.	Man's place in nature	102	28	14	52	20	16	2
IX—Man's Control of His Environment.								
A.	*In relation to public health.*							
76.	Method of dispersal of bacteria and diseases caused by them	113	27	39	20	51	53	6
77.	Methods of destroying bacteria	113	26	38	17	51	49	6
78.	Protozoa in relation to disease	107	25	5	54	43	34	2
79.	Insects in relation to disease	111	27	5	60	40	45	8
80.	Other animals of direct or indirect importance in the generation of disease	103	23	3	45	40	30	6
81.	Methods of disease prevention by the individual emphasized	106	24	11	19	51	44	2
82.	Municipal sanitation	109	24	10	12	53	49	4
83.	a. Public supplies, milk, water, food.	105	22	9	14	53	51	9
84.	b. City department in connection with Public Health	91	18	4	8	48	38	3
85.	c. Museums, schools, baths, parks, markets, etc., in relation to public health and public welfare	77	18	7	9	45	30	3
B.	*In relation to material wealth.*							
86.	Forest in relation to soil, water, plant and animal resources	107	26	62	9	3	32	2
87.	Food producing plants and animals in their relation to the wealth of the nation	104	24	59	33	1	27	14
88.	General biological relations existing between birds and insects	101	30	12	55		15	7
89.	Protection of birds	98	32	13	52		20	9
90.	Laws, literature and governmental work in protecting forests, wild flowers, birds, fish and other animals	90	26	49	41		22	10
C.	*In relation to improvement of plants and animals.*							
91.	Factors in plant and animal breeding.	100	28	58	46	4	16	19
92.	a. heredity	104	36	54	49	8	15	20
93.	b. variation	103	28	62	46	13	12	18
94.	c. selection	102	26	62	47	12	14	20
95.	d. hybridizing	101	27	61	40	2	14	19
96.	e. inheritance of unit characters	90	23	47	39	6	12	17
97.	Improvement of man through eugenics sanitation and personal hygiene	86	27	11	24	33	25	5
98.	Biographical studies of some great biologists who have contributed to human welfare	85	27	40	48	15	12	2

The following data are of interest with reference to the sequence of the science courses in the curriculum. In one hundred three schools reporting, Biology is offered in 35 schools. Two schools require it in the first year, three in the second, one in the first or second, one in the first, second or third, or a total of seven schools *require* Biology. One school offers Biology in the first year, fifteen in the second, two in the first or second, two in the first, second or third, four in the second, third or fourth, three in the second or third, one in the third or fourth, a total of 28 schools offering elective.

Comments on Growth

Botany is required by four schools in the second year; it is offered by five schools in the first year, forty three schools in the second year, one school in the first or second year, one school in the first, second or third year, one school in the first, second, third or fourth year, six schools in the second or third year, nine schools in the second, third or fourth year, one school in the third year, one school in the fourth year, one school in the third or fourth year, or a total of 69 schools, or 73 schools altogether.

Zoology is required by four schools in the second year. It is offered by one school in the first year, thirty eight schools in the second year, one school in the first, second or third year, one school in the first, second, third or fourth year, four schools in the third year, two schools in the fourth year, seven schools in the second or third year, seven schools in the second, third or fourth year, one school in the third or fourth year, or a total of 62 schools offering, or a total of 66 schools altogether.

Physiology is required by 26 schools in the first year. Seven schools offer it in the 1st year; 7 in the 2nd year; 1 in the first and 2nd year; 1 in the 1st, 2nd, 3rd, or 4th year; 3 in the 3rd year; 3 in the 4th year; 2 in the 2nd or 3rd year, 2 in the 2nd, 3rd, or 4th year, 1 in the 3rd or 4th year, or a total of 27 schools offering, 26 requiring it, or a total of 53 schools.

General Science is required in 28 schools in the first year. It is offered in 25 schools in the first year and 2 schools in the 1st, 2nd, 3rd, or 4th years, or a total of 53 schools.

The data on agriculture was so incomplete that the committee does not deem it wise to make any comments.

From the above data, the following facts appear. 1st, that general or elementary science is being offered in about 51% of the schools replying to the questionnaire. 2nd, that Biology is offered in 34% of the schools reporting; that Botany is offered in 70% of the schools; that Zoology is offered in 64% of the schools; that Physiology is offered in 51% of the schools and is required in only 25% of the schools reporting, although a number of schools state that physiological topics are offered with General Science or Biology. The Statute with refernce to the teaching of a certain number of weeks of physiology is evidently honored in the breach in this state.

This data must, however, be considered as relatively unreliable because the committee was sometimes unable to tell whether botany or zoology were given as half year or full year courses and in many cases the year in which a given science was placed had to be partially guessed at by the committee. On the whole, however, these figures may be taken to show the sequence of science in the high schools of the state, as the answers come from representative schools, both in large cities as Chicago, in the smaller cities and in the rural and township high schools.

Finally, the committee respectfully submits the above report and asks to be continued for another year either in its present personnel or with the addition of new members, in order to make further investigation of conditions.

In the discussion which followed Professor Hollister spoke in substance as follows:

In order to determine what should constitute a course in Biology, we need to understand what we seek to accomplish in the teaching of Biology in high schools. In the first place, I should agree with those who have spoken that one very important purpose of such teaching is to train pupils to observe accurately and to report all their observations truthfully. We need also to make pupils definitely acquainted with the various life forms in nature and in doing this to acquire that interest which comes along with an acquaintance with plants and animals. Another aim in teaching Biology, as I understand it, is to give to the pupils a knowledge of life purposes through a study of life in action, both in plants and in animals. It is important also that they acquire through such a study a knowledge of the laws of selection and of survival in nature. Certainly it seems to me that in our teaching of Biology, we should be able to give to our pupils a pretty thorough understanding of the relations existing between plants and animals and between these two groups and man. They should learn to realize that all animal life is dependent upon plant life and that man is closely related, both to plant life and animal life, economically as well as in matters of health. They should understand what plant life and what animal life is useful to man and what is hurtful to man.

This brings us to a consideration of the laws of health. I should agree with what has already been said that it is very desirable to teach the laws of health to children in the high school. In doing this, however, they need to have a fundamental knowledge of the principles of Biology in a general sense. Healthfulness and unhealthfulness are directly determined by the action of these various life conditions. We teach in Agriculture the law of selection. For instance, in the growing of corn, we show our pupils that in order to breed good corn, we must select the best ears, representing the very best product of the corn field. In our classes in stock breeding, we teach also the necessity of selecting the very best types in the breeding of hogs or cattle or sheep or horses. Somewhere in our high school course, we should teach these same truths with reference to the continuity of the race of man. There should, in other words, be a place in biological teaching for Eugenics.

Personally I believe that a course in Elementary Biology is more desirable for high school purposes than separate courses. Our General Science work should be done below the high school; and I protest against the idea of undertaking to divide a General Science course into definite subjects, as for instance, the teaching of Physiology, and calling it a part of the General Science course. Physiology, if taught at all, should not be taught in that way. It should be a natural result of the study of life forms in general.

It seems to me that an ideal arrangement for Elementary Science for high schools would be a year given to the teaching of Biology and another given to the teaching of Physical Science—not Physics and Chemistry, but Physical Science. Two courses of this kind in my judgment would be far better than any arrangement such as is now considered under the heading of General Science for the high schools.

The general subject was further discussed by Miss Ada L. Weckel, of Oak Park, under the general heading of **The Importance of Physiology in Secondary Education.** Miss Weckel's presentation follows:

There are only two statutes in the School Law of the State of Illinois which pertain to the course of study in the high schools. One is a requirement in physical training which was passed in 1915. The other is a statute, which was passed many years ago, regarding the teaching of physiology. Section 273 of the School Law states that "all pupils below the second year of high school and above the third of school work, * * shall be taught this subject every year * * for not less than four lessons a week, for ten or more weeks of each year."—The School Law of Illinois, Circular 157, Section 273, Page 96.

The report of the N. E. A. Committee on Reorganization of Curricula gives as the first of its seven aims of public school education that of *health*. For the fulfillment of this aim the Committee on the Reorganization of Science in the Secondary Schools recommends that "health topics should be included in the science taught in the junior high school, and in at least the first two years of the four year high school."—Reorganization of Science in Secondary Schools, Bulletin No. 26, U. S. Bureau of Education, 1920.

Since the N. E. A. Committee recommends the teaching of physiology in the first two years of the high school, and since the school law in this state requires that it be taught in the first year, perhaps a discussion pertaining to the necessity or the desirability of its teaching may seem out of place. However, we sometimes lose sight of the objectives in education; we become remiss in the observance of our laws; or, in true American fashion, we question their justice, and obey them in fact, but not in spirit. And so, since instruction in physiology is considered of so much importance by members of this committee, they are agreed that some consideration should be given to it in this report.

It is now generally conceded that the sciences taught in high school especially those taught in the first two years, should be treated from the standpoint of their relation to the everyday life and experiences of the student. Certainly no science taught has a more direct bearing upon the life of a student than physiology. Any knowldge to be useful must pass into action, and hence the objective of the teaching in physiology should be hygiene. Unless the student acquires habits which lead to a better physical life his study of physiology is futile. We realize now as never before the necessity of healthful living, for the physical examinations of the young men during the war showed that most alarming conditions exist. We are impressed with the fact that as a nation it is important for us to see to it that our young people are taught how to secure better health. In its final analysis the strength of a nation rests upon the good health of its citizens.

It has been said that "health is man's birthright, and that it is as natural to be well as to be born." Personally, I should like to change this quotation to "health is man's birthright," and it is his *duty* to maintain it. I can never become reconciled to the extravagant way in which boys and girls of high school age throw away their excess energy with no thought of its conservation for days to come. Partly through carelessness, but principally through ignorance of hygienic and physiologic laws, young people lay such foundations that

after middle life the thoroughly well persons are the exceptions in any community. It is then that they are preyed upon by quack physicians; they resort to the use of patent medicines; or, if they are victims of the prevalent habit of worry, they seek relief by reading books on "outwitting the nerves" or they try to regain their health by repeating every day Coue's, "Day by day, in every way, I am getting better and better." I fully appreciate the value of these methods for some people, but how much more sane and how much more certain would the results be if this sacrifice of health were prevented by proper and timely instruction.

Young people should be taught the physiologic laws and the hygienic principles necessary to maintain good health. Then when illness follows the disobedience of these laws and principles, the offender should be trained to realize that he has committed a crime from which not only he, but others, may suffer. Through the establishment of health departments in our larger cities we are coming more and more to be protected against disease because *public* hygiene may be enforced. But not so with *personal* hygiene. That must be taught. And so many of the minor ills of life come from improper habits of eating, sleeping exercising, or habits of work.

Hygiene cannot be properly taught without a knowledge of the fundamental principles of physiology. The parts of the human body and their normal functions should be understood by every intelligent person. If the boys and girls who enter the high school have acquired this information and have formed proper habits of personal hygiene, then, it seems to me, there is no real need for the teaching of physiology in the high school. In order to determine these facts, I recently asked five classes of freshmen, one hundred and four students, to answer twenty questions in physiology. These students have had general science since the beginning of this school year, but as yet their work has not included physiology. Before they entered the high school they had had two months' work in physiology in each of the last five years in the elementary school, thus complying with the state requirement. The questions given in this examination were very simple, and they were selected so that some information might be obtained from the answers given by the students about: 1, their knowledge of facts about their bodies; 2, their knowledge of laws of hygiene; and 3, their habits of personal hygiene. The latter I consider much the most important, because laws are of little value unless we obey them.

The questions which were asked in this examination and the summaries of the answers to them are given in the following tables. In the first of these tables the questions are arranged in the order of the frequency of incorrect answers.

TABLE I

Questions	*Answers*	
	Per cent Correct	Per cent Incorrect
1. How many times a minute should your heart beat?	27.8	72.2
2. What are germs?	43.2	56.8
3. What is a fracture?	53.8	46.2
4. Why are habits important?	56	44
5. What temperature should your body be when your are in good health?	56.7	43.3
6. Why do you need a variety of foods for a meal?	57	43
7. Why is it important that waste materials be removed regularly from the body?	65	35
8. How are habits formed?	68.9	31.1
9. Why do you need a heart?	71.1	28.9
10. Why do you need fresh air?	75	25
11. What is the use of your lungs?	78	22

12.	Why do we vaccinate against a disease?	82	18
13.	Why do you need exercise?	82.7	17.3
14.	How may colds be prevented?	85	15
15.	If you cut your finger, how should the wound be cared for?	91.3	8.7
16.	Why should you not sneeze or cough into another person's face?	97	3

TABLE II

Questions	*Answers*							
	0	1	2	3	4	5	6	7
17. How many times do you clean your teeth?	.9%	34 %	40 %	22.4%	2.7%			
18. How many times a week do you take a bath?		15.6%	30.5%	25 %	13.3%	4.7%	.5%	10.1%

TABLE III

Questions	*Answers*						
	5	6	7	8	9	10	14
19. How many hours a day should you sleep?			1.5%	35 %	34 %	28 %	1.5%
20. How many hours a day do you sleep?	.9%	.9%	18.4%	30 %	40 %	9.8%	

It is evident from the results given in Table I that these students are not well informed about many things concerning their bodies. I was surprised to find that 72% do not know the normal rate of the heart beat. Over 50% do not know what germs are, some of them think that "they are small dangerous insects" and others that "they are bad properties that get into the blood." Between 40% and 50% did not give reasonably intelligent answers to such questions as: Why are habits important? What is a fracture? What is the normal temperature of the body? It seems almost incredible to me that 22% do not know that the lungs are used in breathing. From one answer I learned that "they are a protection and a support to the body."

From the answers given in Table II, I regretted to learn that one boy, at least I assume it was a boy, does not clean his teeth. Fifteen percent of these students are having only one bath a week. This seems unnecessary in a community in which most of the homes provide adequate facilities for baths.

The information in Table III is important in two respects: first, because it shows that nearly 20% of these boys and girls are getting less than eight hours of sleep; and second, that all except 1.5% of them *know* that they should have more than that amount. This is an illustration of the fact that they are like their mothers and fathers in that they sometimes lack the will power to do the things which they know they should do.

The data given above taken from a high school in a typical community indicate, it seems to me, the necessity and the importance of instruction in physiology, especially hygiene, in the high school. No matter how superior the child's instruction in the elementary schools may have been, he has not had enough training to prepare him to give the proper care to his body. When the state requirement is met, he has had only five years of two months each, or the equivalent of one school year's work, an inadequate preparation for the maintenance of the child's health, a most important factor in his success in life.

To a group of teachers trained in biology it is not necessary to point out the relations between human physiology and biology. It is sufficient to say that physiology in all of its phases and applications can be most effectively taught in a course in biology. If by this report the members of this committee have renewed your interest in physiology or have increased the enthusiasm with which you shall teach it, they will feel repaid. No service which we as teachers render will contribute more to the happiness of our students than that which promotes their health.

Business

Clarence Bonnell, Harrisburg, Illinois, was unanimously re-elected chairman of the biology section, to serve for a period of three years. Alice J. Patterson, Normal University, Normal, Illinois, was elected member of the committee for a period of one year to fill the unexpired term of R. H. Linkens.

A motion was made by H. B. Ward, Department of Zoology, University of Illinois, and properly seconded, that the committees on elementary science courses and on biology courses continue their work for another year with their present personnels. The motion was carried without dissenting vote.

The afternoon session was given to the presentation of the following papers. Mr. R. L. Barney, who was to have spoken on "Conservation of Our Fresh Water Fauna," was not present.

Biology Teaching as a Means of Conservation of Our Resources, Through Instruction in Physiology and Hygiene

L. Mae Ormsby, Decatur

There is much to be said concerning the conservation of our resources, our forests, our birds and our minerals, but the most vital of them all is the advancement and care of our human resources. Much can be done by the social sciences in this respect but with the proper point of view of the high school teacher of physiology it would be hard to estimate what could be done to make the high school boy and girl proud of his body, to create in him a desire to find ways by which he could improve himself; to develop the best habits for healthful living, and to conserve and develop all in him which will make him a better citizen.

Our aims and objectives therefore in accomplishing the conservation of our human resources, by the teaching of physiology are: to teach biological facts; to develop a scientific attitude of mind; to develop better citizens and to develop a better human race.

In our attempt to make the subject practical the tendency has been to get away from anything that might rightfully be called physiology. Physiology can hardly be recognized in the few rules of health, with no scientific reasons back of them, that have been used to formulate a course known to the science world as hygiene. In so doing the subject has continued on the level of an uninteresting course, taught in order to comply with the law. Some poor unfortunate teacher who happened to have an hour vacant on the schedule finds this class thrust upon her.

In the organization of a subject so big, we must define our aims and objectives. Physiology in its first objective, to develop better citizenship, is no different from history, civics or English. In order to succeed, the teacher of physiology must create from the very first an atmosphere of respect and enthusiasm for the subject because it is a study of the student's own body, the temple in which he lives. He must be brought to feel a pride in physical excellence, which excellence can be accomplished only by an understanding of how his body is constructed and how it functions, the knowledge of which is linked with the laws of health which he uses daily. A knowledge of physiology and hygiene develop a self respect which often amounts to a reverence as great as that expressed by a girl who said: Physiology is a sacred study. It makes you understand God better! Furthermore wherever the student finds himself he must be better equipped to fit into society for having studied physiology. In many respects we find it closely linked with the social sciences. We might in many ways call it a class in citizenship.

To develop a scientific attitude of mind is no small part of the subject, in fact it is as much a part of the study of physiology as it is a part of any other science to develop such an attitude. Only fifteen per cent of our students who enter ninth year go to college, but whether they go to college or end their educational training with the high school, the development of a scientific attitude of mind has long ago come to be the problem of the high school. Nothing will better equip the student to battle with problems in every day life than a scientific training. He should learn to think logically, to trace back to the sources, to reason from cause to effect, and to draw his own conclusions. No science is better adapted to such reasoning than physiology. If the student continues his course and finds himself in college within a year or two, he should be much better fitted to comprehend college science, he should be able to accomplish its details with greater ease and he should be able to see deeper into science subjects because of his High School training.

The approach to such an end is by teaching biological facts. It is a mistake to make a science in high school too elementary. The recent tendency is to confine high school physiology to an elementary study of hygiene. It is as much a mistake to underestimate the ability of the student as it is to overwhelm him with technicalities. From the time the child enters the first grade until he reaches the high school, he is given, year after year, such rules of hygiene as he can well absorb and use, and at the high school age he has reached the time of his life when he has an investigating mind, which, with the proper guidance, can reach out far enough to get the anatomy and physiology which are a necessary background upon which to base his laws of hygiene.

The recent tendency in the medical world is to prevent rather than to cure; the hope is to educate the layman to that extent. The time for physicians to remain silent and hand out medicine to the patient is fast passing. The modern physician is as interested and enthusiastic about his work as the progressive school teacher and he does not only prescribe but he instructs as well. The wide awake teacher can interest the student from the clinical point of view by giving information about the common diseases in relation to the organs studied, together with natural and common preventions of such diseases. Interest under such conditions will be unanimous.

The establishment of health departments in so many cities for the purpose of instructing mothers in the proper feeding of infants; for the giving of preventive measures for the common diseases, and the giving of proper hygiene information to all individuals who are interested enough to inquire, is a movement which indicates that physiological education of our young people should be definite and required of all. The instruction should be as much, and as advanced as they are capable of comprehending. The amount that they are able to take in depends largely upon the method in which it is given. So much depends upon the store of knowledge the teacher has at hand. A text book is a secondary

help. Laboratory equipment is the chief tool for establishing definite and correct knowledge of anatomy and physiology. There is no part of biology which can be better demonstrated in laboratory exercises than physiology and yet there is none so much neglected. A course planned without laboratory work is dead. It may better be omitted than given in such a way, for such a method will create dislike for the subject whereas the use of moderate equipment will result in unquenchable enthusiasm. In Decatur we are so fortunate as to have access to a packing house where we can get any of the mammalian organs any day we desire them. The organs of the hog are best for our purpose. When we study digestion, we have enough specimens of the alimentary tract to supply the class conveniently. From the time our first specimen is brought in from the packing house the interest begins to rise rapidly. It is surprising how few students know that the pancreas is "sweetbread" and how hard it is for them to visualize without the specimen, how the diaphragm looks. With the limited knowledge a high school student has it is hard to imagine anything more uninteresting than the book study of blood. And yet with beef blood brought into the class, both defibrinated and clotted, it would require skill to keep a student from being interested in knowing about the fibrin collected on the stick with which the blood is stirred, and to know something of the content of the serum. Since all of the food elements are contained in the blood, he refers this study of the blood to, and connects it up with, his study of foods in which he learned of the importance of complete and balanced ration. Here in the study of blood we repeat our anthoproteic test for protein which we find as tissue of the blood in great abundance.

The specimen which creates the most excitement in the class perhaps, is the heart. The large specimens which we are fortunate enough to procure show the valves so well that each student is able to work out for himself the direction of the blood flow through the chambers of the heart. He is never likely to become confused on this point after having had the structure itself. The functioning of the valves becomes evident and such a disease as leakage of the heart is easily understood. The questions naturally raised are how can I have a strong heart, normal blood pressure and the like.

When respiration is studied, a pair of lungs must, by all means, be obtained. Here both structure and function can be demonstrated, for the first thing that the student wants to do is to blow them up. The important thing in connection with the study of respiration is to instruct the child concerning the diseases of the respiratory organs, particularly colds, the actual means by which he takes colds, how to prevent and how to cure them. It is surprising how many do not know the simplest natural causes, preventions and remedies. It is true that comparativley few schools have access to a packing house. Yet in communities where such material is not accessible, there are cats galore and rabbits sometimes; in such cases in the study of the circulation and respiration the frog serves admirably.

Moving pictures add much to interest aroused in the study of physiology. The good fortune to possess a moving picture machine means a great deal to any class in science and in a class like this such films as demonstrate the eye, the beginnings of life, etc., are helpful. These may be secured from the State Health Department.

Plaster of Paris models of the eye, ear, brain and heart are very useful especially on recitation days. Charts are very necessary and the American Frohse Anotomical Charts published by A. J. Nystrom are to be highly recommended.

Sstill another means of arousing interest in gathering biological facts is by means of projects for the individual or for groups which are carried on throughout the greater part of the semester with the objective in view of stimulating the different members of the class to take pride in their physiques. For instance, when we study foods which is the way we begin our course, some who are underweight plan their diet to gain weight and weigh themselves regularly

throughout the semester; others take regular exercise to try to gain lung capacity, still others try to form some good habit to displace a bad one. In one class some boys became interested in a project to investigate the effects of smoking. A small group who smoke and an equal number who do not smoke have agreed to investigate the effects. A reliable physician volunteered his services to give these boys a fairly complete physical examination at regular intervals covering a three months period. At the end of that period those who smoke are to quit for three months and continue the examination for three months longer to see what the effects will be. Mental tests will also be a part of the project. We are aware of the fact that the numbers taking part in this project are not great enough to tell a great deal but we are in hopes that it will arouse some bigger interest which will result in something worth while.

There are many times during the semester when by having segregated classes there is greater freedom of expression than is possible to get in mixed classes. Under such conditions there is no other science that lends itself better to the teaching of sex and sex problems than physiology. We must recognize that these boys and girls are to be our future citizens and with that in view, they must be given the finest attitudes and understandings about these most sacred things of life. Here an atmosphere is created. The most natural conditions for such instruction are created by developing and leading up to sex information by the natural sequence of study: foods and nutrition, digestion, circulation, respiration, excretion and reproduction. With utmost care but in a straight forward way the teacher with her careful preparation and readiness to answer any questions which might be asked concerning biological facts, and to answer all anticipated questions that might arise in the mind of the student, she gives out the information, in the same unhesitating way that she gives it about digestion and circulation.

In the first lesson the biological facts may be developed briefly. Most of the students have had either botany or zoology, many of them both, and they can appreciate the story of the union of the two unlike cells, eggs and sperm cells with the simplest explanation of the character bearing units (chromosomes). They can understand the first stages of development. Then follows a description of the female glands with the simplest narrative of the formation of the egg in the Graafian follicle with a brief story of ovulation, implantation and development. This may be alternated with the explanation of the male glands, the effect of hormones in both sexes, physical secondary differences developed at adolescense, grace and beauty and refinement in the female, and strength, vigor, daring and bravery in the male.

Specimens may be used to a very great advantage. Nothing excites more wholesome enthusiasm than the hen's egg in different stages of development; one day of incubation, three days, five days, on up to twenty-one days. There they can see the different stages with the heart beating. It is indeed very impressive. By the time the students have the biological facts they should be so interested that the sacredness of the beginning of life is well founded in their minds. We were fortunate in this connection to get a moving picture film, "The beginning of life" from the State Health Department. Biology of sex may be followed by a comparatively brief but clear and emphatic explanation of venereal diseases, their results, untold sorrow, and their destructive effects upon the innocent as well as upon the offender. At this point it is very easy to lead boys to believe in fair play and they can very easily be brought to see the injustice of the double standard. The necessity of the health certificate for marriage is here brought to their attention. It is only by a breaking down of the double standard that this health problem can be solved. With the biological and pathological information fresh in their minds, this is the ideal time to impress upon them the reason and importance of social conventionalities, the appreciation of chaperones, etc.

It is the best time to impress upon the boy the strongest lessons of social courtesies and chivalry, to teach him the full meaning of respect for his girl friends, his sister and his mother. I have found that almost without exception the easiest and most effective way to reach a boy is by reference to his mother. One of the finest things in the world is to impress upon a boy at the age of adolescence the beauty of tender attention and respect to his mother at the most trying time of her life. The whole purpose of teaching sex biology is to bring about an understanding and to create a wholesome attitude toward sex, and to establish the profoundest respect for motherhood, whether it be the present day mother or the future mother.

These lessons logically lead to the climax of the group, the lesson on heredity. The social sciences have tremendous problems to solve which are all but impossible yet their tasks become increasingly greater. They may produce corrective methods, produce better means of handling criminals in our penitentiaries or insane asylums and provide proper environment for the population from which these institutions are fed, but it has been thus far impossible to retard this steady influx of rapidly increasing numbers to these institutions. We are hearing more and more about the handling of defective and subnormal children in our public schools but brains and millions spent to make them useful members of society do not affect the source from which they so rapidly come.

In Decatur the backward children were handled in what was known as ungraded rooms. Many of these children were there because of mental and physical deficiencies. Much was made of the work they did. To me the attractiveness of the work done is not the thing that stands out. The tragedy is that it is all so useless and that thereby a solution of our real problem has not even been attempted.

Mendels law is here well enough understood to apply to plants and animals and to human beings as well. If the young people in our schools are soon to be our future citizens, our politicians, our legislators, our voters, they must feel some responsibility in the framing of marriage laws. They must also be wise enough to see that with better marriage laws the problem is not solved, but that whether the methods for accomplishing such a tremendous thing are to be by the use of mental and physical tests and institutions of segregation, or by sterilization, the increase in number of these defectives must be prevented. While it seems far in the future, it is our duty as scientists to prepare a generation equipped to think scientifically. The child of today must not only be able to think, but he must be citizen enough to care for the development of the future race and to make himself a factor in whatever way he can for its betterment.

In the science world we appreciate Darwin. We believe in a Mendel. We reverence Pasteur. We respect and appreciate the numerous doctors who in their private laboratories are doing research work but after all, we can function only when we link up with the social world and come down to earth to benefit the masses. In so doing we link so closely together the social and natural sciences that one can do nothing without the other.

We have done a great thing when we have developed better citizens. In order to do this we must develop a scientific attitude. In developing a scientific attitude we must instil a mass of scientific facts, but we have done far more when we have developed a better future race.

Robert Ridgway at Home

By Ella R. Dean

Robert Ridgway was born at Mt. Carmel, Illinois, July 2, 1850. His father kept a drug store and gave his son a common school education. In childhood Robert showed no especial aptitude for any sort of work, neglecting whatever task to which he was assigned, whenever a new or strange bird put in its appearance.

At one time while driving along on a delivery wagon he saw a bird which he thought he must have. In his great desire for this particular bird, he forgot all about responsibility for the team, even forgot to say, Whoa! to the horses, and simply jumped from the wagon, leaving the horses without a driver. Robert got his bird, but the team ran away and Robert had proved himself incapable of being trusted with a team, so was "out of a job."

His father lost all patience with him on account of this overwhelming desire to acquire bird specimens. They were as trash to the father and only served to distract Robert's mind from useful occupation toward which he seemed wholly indifferent. He collected and stuffed, in his own way, quite a number of birds.

He was very bashful, and relatives say that when they went for a visit for the day, all that they ever saw of Robert was as he went over the back fence.

When Robert Ridgway was fourteen years of age, a great and happy turn came in his life. Professor Spencer F. Baird made a trip to Mt. Carmel. Dr. Ridgway, then the bashful boy that he was, gathered his birds together and took them to the hotel where Professor Baird was staying. Professor Baird was interested in the lad, recognizing in him requisite qualifications which would make of him a useful assistant in his Government work. He made what seemed to the father of Robert, a most munificent offer—$50.00 per month, I was told—if the boy would come to Washington and work under his direction. There was not the least opposition from the family to Robert's going, and a few weeks later, Robert left for Washington, D. C. where his real life began.

He was not only a lover of birds but quite a natural artist as well. His first painting was done with paints from his father's store. Among his early paintings are those of birds, beautiful in their color and naturalness, and works of which most of us might justly be proud, had we been the painter.

In his work he found it necessary to have a color chart to aid in describing the birds. From the first simple color book has come his big color book which he was twenty-five years in completing. The colors in this book were all made in water colors in the original copy by Dr. Ridgway himself. This book now forms the color standard for many large textile concerns both here and abroad. One traveling salesman remarked that he knew a firm that put the name of Robert Ridgway in the selvage of its silks.

He is not only a color artist but also a photographic artist. One need spend but a short time in his home to discover this for books of photographs and transparencies are in evidence. He has hundreds of beautiful scenes of nature which he has taken captive with his camera. It is indeed a privilege to look through his photograph albums.

His great work is "The Birds of North and Middle America." Eight volumes are completed, the ninth is in the process of writing. He is striving to complete a task which will take at least ten years more. Birds are sent to him in groups from the Smithsonian Institute for this work. Not long ago he was heard to remark that his writing was work now. After these fifty-five years of untiring and unselfish devotion to his task, we ordinary folk wonder that it has not become so sooner.

You have heard of the boy and something of his later achievements which may have interested you, but still more interesting is Robert Ridgway, the man, at home in the south edge of Olney, Illinois. His home is a beautiful well-kept place of eight acres. The entrances are artistically arched with rustic work. A brick walk leads in a gentle curve from the street to the house, which is set near the center of the grounds. Upon arriving one is met at the door by a kindly, pleasant-voiced man of seventy-two years and at once invited into the office. In a short time a sweet-faced woman, Mrs. Ridgway, enters and one is settled for a most pleasant and enjoyable visit. Time undoubtedly has wings out there. One young man said, in speaking of good times, that out at Dr. Ridgway's is where one can enjoy himself in Olney. It has been the writer's

good fortune to spend several afternoons with Dr. and Mrs. Ridgway in their home, and more enjoyable afternoons have never been spent.

The office is a large front room on the northwest with a large bay-window to the west. Upon the walls are many beautiful pictures of nature, here a Cardinal, an oriole, there a panther, a squirrel, a bowl of roses, stately trees, water scenes, wild flowers, all arranged to give the nature atmosphere to the room. Some are done in the most beautiful colors, done, some of them, by the Doctor himself. Upon the tops of cabinets and shelves are autumn leaves, specimen and curios from foreign lands, bird nests, and all so artistically displayed that they seem a natural part of the room. Books are to be seen in neatly arranged cases. 'Tis certainly a wonderful atmosphere for work and enjoyment of that work.

As any one who does a great deal of desk work must have some recreation, Dr. Ridgway has his. "Larchmound" his home, and "Bird Haven" are his recreation. The work done here is experimental and he says an "antidote" to the confinement and fatigue of long continued desk work; a harmless and instructive diversion and healthful exercise with a purpose beyond that of mere personal pleasure. This work has nothing whatever to do with his work for the Government as some suppose it has.

He buys and has given to him plants from all parts of the world. A Chinese Quince fruited here. Upon sending the fruit to the Arborvitum to get the correct scientific name, he was informed that his was the only tree of its kind which had borne fruit outside of China, except one in England.

He finds that the Magnolia brought from the South does not winter well in Southern Illinois, but seeds from those farther north grow into plants which stand our winters.

At Bird Haven is a Cedar of Lebanon which was unharmed by the drought from May 15 to Oct. 7 this year.

Doctor Ridgway has traveled all over the United States excepting west from Texas to the Pacific and says that Southern Illinois is best of all so far as the number and kinds of plants which can be grown is concerned.

Bird Haven is an eighteen acre tract of land in Richland County, Illinois. It has more different kinds of trees growing on it than on any other spot of like area in the North Temperate Zone. This is not by accident but due to the foresight, care, and knowledge of Doctor Ridgway. It is in reality a treasury of trees and he says "A modest effort at conservation of wild life." It is the partial realization of a desire conceived many years ago.

During his early life, Doctor Ridgway was led, by the study of birds, to the woods, then virgin forests, remnants of which exist now only here and there in the lower Mississippi Valley. These remnants are constantly growing smaller from the increasing demand for lumber and other forest products. These frequent and enjoyable trips in the "old woods" give him a love for trees which has increased with the years.

Doctor Ridgway saw that the "grand old forests," as he terms them, of the bottom lands of the middle west must soon be only a memory, for they were being destroyed at an increasing rate. This gave him the desire, many years ago, to be able some day to purchase a piece of woodland, and preserve it for future generations.

No effort has been made to preserve a sample tract of the hard wood forests of the lower Ohio basin or the lower Mississippi Valley. These forests, "in their early development, were unexcelled in the variety of trees composing them and unrivalled among the non-coniferous forests of the North Temperate Zone in the size attained by fully mature individuals of many species; indeed these forest giants were to the other broad-leaved trees what the Sequoias of California are to the Conifers, and even no less remarkable," says Dr. Ridgway.

The work of setting aside a tree preserve has been put off almost too long. In fact, none of us will ever see such forests as Dr. Ridgway says were his "stamping ground" in his boyhood days, nor such as he often gazed at and looked up to in wonder, admiration, and reverence.

In the autumn of 1906 Dr. Ridgway was able to start to carry out his long cherished plan. It was then that he found that the native woods were practically all gone and that the price for the culled remnants was $50.00 to $150.00 or more per acre. He succeeded in obtaining a small area of second growth woods, the land on which it grows having been in cultivation thirty-five years before he purchased it.

The area of eighteen acres had seventy kinds of trees growing naturally on it. This holds the record, so far as published information shows, for the entire North Temperate Zone. There are here more kinds of broad-leaved or non-coniferous trees than are native to the entire Pacific coast, from southern California to Alaska inclusive, and more kinds of oaks than are native to the whole of New England.

Doctor Ridgway has planned in the development of Bird Haven to preserve all the indigenous kinds of trees and other woody plants growing there naturally, and also to add to them others that are native of Illinois until the state sylvia becomes completely represented. In spite of discouraging limitations as to time and means, there are now growing on Bird Haven, or growing in the nursery and awaiting transplantation, nearly 150 species and varieties of Illinois trees, besides about 65 kinds of shrubs, and nearly 30 woody climbers that are native to the State.

To further increase the interest and usefulness of the place many trees, shrubs, and climbers from other parts of the United States have been added. The selection of these is confined mainly to those of an ornamental character. All of the eight native magnolias, except one, are growing there. Two eastern species of hemlock, spruce, cedar, elm, sourwood or lily of the valley tree, and white fringe are there. Many of the more beautiful or historically interesting exotic trees have been added, among them a fine specimen of the cedar of Lebanon, the ginkgo or maiden hair tree, the mimosa tree, three of the Asiatic magnolias, umbrella pine, Japanese cedar, six of the Asiatic flowering crab-apples, Chinese cedrela, trifoliate orange, "Texas" umbrella tree (a native of northern India), a tree box, Japanese holly, Japanese yew, two species of false yew (cephalotaxis), three species of bamboos, and many others.

The incentive to growing many of the above was the wish to test their adaptability to local climatic and soil conditions. It has been found that very many things reputed to be tender or doubtfully hardy prove to be otherwise if planted in a congenial soil and more or less protected positions. Doctor Ridgway finds this true of the four exotic bamboos; Arundinavia Simoni, Ajaponica, Mambusa quadrangularis, and phyhostaclysmites. The third lasted only until it had produced seeds. The first grows wild in Richland and adjoining counties. All of them have proved so hardy that they are spreading beyond the bounds assigned them. The rhodendrous mountain laurel, azaleas, and other ericaceous shrubs are no more difficult here than are garden roses.

During the past twelve years little has been done at Bird Haven except occasional plantings. Doctor Ridgway has not been able to see it more often than ten or twelve times each year. The ground beneath the trees has now grown up with seedlings, saplings, shrubs, vines, and the usual undergrowth of undisturbed woods. This change has greatly increased its interest to the botanist, for many things which are found among the undergrowth were not there before grazing animals were excluded. New species appear every year, making the flora more varied.

Doctor Ridgway is anxious about the future of this preserve. He wishes to forestall the undoing of all his efforts by future exploitation of the property for its timber or for agricultural use, to insure its perputation for the benefit

of future generations. His intention has always been to turn Bird Haven over to a prominent educational institution or well-established and well supported society. Bird Haven has been offered as a gift, successively, to two of the leading universities of Illinois; but neither accepted the gift. Every effort will be made to secure its permanancy as a safe refuge for wild life and as an ideal botanical station, where all the trees, shrubs, and woody climbers of Illinois and many others, its birds and other wild creatures may be studied from living specimen.

Doctor Ridgway says the only hope for preserving nature and protecting it is in educating the boys and girls to protect trees and birds. A Coffee Nut tree growing in a neighbor's yard was to be cut down. An order came to Doctor Ridgway for some seeds from this particular kind of tree. He told the neighbor's little girl to gather the seed for him and he would give her the money he received for them. She did so and in course of a few weeks, he received a check for $1.00 which he turned over to the girl. The father at once became interested in saving his tree which seemed so valuable to others.

None of the planting done either at Bird Haven or Larchmound is of the formal type. It is done so nearly as possible as nature would have done it. The trees, shrubs, etc., which he wishes to save are marked. Others are to be removed soon to make room for new plantings. Boys and hunters often do serious damage to the plants at Bird Haven, but Doctor Ridgway is kind enough to say that it is done through ignorance of their great value. His is truly a great, thoughtful, and interesting work for the future generations.

However, Doctor Ridgway is not alone in his great work for others. By his side in his every work is his partner and helper, Mrs. Ridgway. No story of Doctor Ridgway would be complete without a little knowledge of Mrs. Ridgway for she, too, is a lover of nature.

Julia Evelyn Perkins lived in New York City until she was fifteen years of age. As a child she fed the birds about Central Park. Her father was a wood-engraver and was engaged in making engravings to illustrate a "History of North American Birds" by Baird, Brewer, and Ridgway. She delighted in assisting her father by making proofs from his blocks. She was married to Robert Ridgway October 12, 1875.

Her love for birds never ceased. She was ever active in behalf of her bird friends until ill health prevented it. When in Washington she often returned from a walk with "bean-shooters," and "nigger-killers" which she had taken from boys who were thoughtlessly using birds as their targets. She spared no effort to encourage birds to stay around the home. She feeds the birds during the cold winter months. Doctor Ridgway reported 109 bird nests—26 Robins, 20 doves, and 12 wrens among them—on the five acres near the house this fall.

Mrs. Ridgway showed a cardinal nest and a humming bird nest which they had found. She remarked about the beauty of each. The humming bird nest was found in this way. Doctor Ridgway noticed the bird acting as though its nest was near by. So he sat down under a tree and watched the bird for fifteen or twenty minutes. The bird finally flew straight to its nest. There were two young ones in the nest then. When the bird family left, Doctor Ridgway secured the nest for Mrs. Ridgway.

Neither Doctor nor Mrs. Ridgway care for "Society." They would not return to city life except from great necessity. Some of their happiest days were spent at the little cottage at Bird Haven.

She once wrote in a letter "Where love is there is no sacrifice." She lived what she professed. Doctor Ridgway writes "Her life has been one of such complete devotion to her husband and his interests that even Ruth of olden times did not say more truly than she has in practice: "Whither thou goest I will go: and where thou lodgest I will lodge: thy people shall be my people, and thy God my God."

She is yet ever mindful of his comforts and wants. Wishing to see him one Saturday afternoon in October, the writer telephoned his residence. Mrs. Ridgway answered and replied that they would be glad to see me but not before four or half past four o'clock as Dr. Ridgway was resting and must not be disturbed.

She has helped him in a way no one else could. His work has been such that any office help would be of no value to him. Sometimes he works at night or early in the morning, and then too, no help obtainable would know enough about his work to assist much. Mrs. Ridgway, the "Mistress of Bird Haven" and the "Boss of Larchmond" as he laughingly called her, has helped in getting his books ready for the printers. In fact the Color Book was too much for her, so he disposed of it.

Their life has been one of devotion to each other and to nature and both are happy in their chosen work and delighted in their work.

As a closing you are invited to examine a few of the many pictures Doctor Ridgway has taken at Larchmond and Bird Haven. It is to him the writer owes thanks for the loan of films from which these prints were made. Thanks are also due Doctor Ridgway for the information he has given concerning his work in Olney. His many friends and admirers have also given interesting information concerning the man at home.

Teaching Public Health in Biology Courses in the High School

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Biology deals with the science of life, both animal and vegetable. Environment determines whether a species multiplies and becomes abundant, or whether it dwindles in numbers and finally disappears from off the face of the earth. Continuing, man is the highest form of living matter and the control of his environment is termed "public health". The biology teachers who neglect public health therefore are neglecting in the final analysis the prime purpose of all instruction,—the advancement and promotion of the welfare of mankind.

Public health, as we understand it today, is a new science. Some of its principles have been understood many years; others have been added by the discoveries of Pasteur; more have come with each passing decade. As the biological sciences advance so does the science of public health undergo changes to conform to the laws of nature. Public health rests heavily upon the biological sciences.

Before taking up the various branches of biology, there are certain points common to botany and zoology and physiology. Each teacher must of course adapt the outline as given here to his own particular needs. Many teachers already are teaching much public health, others very little; some schools present greater opportunities than others. Therefore, the following outline is given with the idea that it will be suggestive of a broader scope of biology.

A. General Considerations on Public Health.

1. *Scope of Public Health.*

Public health controls the environment of man. Originally, environment, or sanitation as it is known today, included the entire activities of the health officer. When sanitation had gone as far as it could, however, there was still left a gap to be filled. Attention was turned to the individual in an effort to improve his condition in relation to his environment so that instead of becoming a victim of his environment, he would be able to cope with and over-

come his obstacles. Hygiene, or care of the person, therefore, has taken an increasingly important place in public health work. The modern public health department deals with the communicable diseases, with housing, ventilation, food, milk and water supplies, industrial hygiene, school hygiene, child hygiene and maternal welfare, and such other factors as may be inimical to the well-being of the human race. (For convenience, some communities divide up this work so that part will come under another department, as for instance "public welfare".) Emphasis is to be laid however, on the communicable diseases,—the sources and modes of infection and methods by which infection may be prevented.

2. *Causes of Communicable Diseases.*

The most ancient theory of disease was that an evil spirit possessed the sufferer; later it was believed that the malady was a visitation of God for wrong doing. That someone has done wrong is true enough in many instances, for the transfer of infectious material from a diseased person to a healthy person can not be termed a righteous act.

All of the diseases designated as communicable are caused by living matter, either animal or vegetable (or by those ultramicroscopic viruses concerning which we know very little as yet, the "filterable viruses".)

In most instances, a rather direct transfer of the organism in question through the air, by fingers, in food or by insects, is required from the preson harboring the disease parasite to a healthy individual. Every person knows that wheat will not grow where wheat is not planted; many, however, do not stop to think that diphtheria will not develop where diphtheria bacilli are not planted.

3. *Methods of Disease Transmission.*

The three F's—fingers, flies and food,—are responsible for the transmission of the communicable diseases in 99 per cent of the cases. By fingers is meant any form of contact of one person with another. As a rule the infecting agent does not pass directly from person to person, (except as in kissing), but is transmitted by some exterior agency. The fingers become soiled with saliva or with intestinal excreta and then smeared over door knobs, arms of chairs, pencils, car straps, dirty towels, etc. The next person to handle the object carries away some of the fresh material and carelessly infects himself by putting his own fingers to his mouth. An uncovered cough or sneeze will not only infect the surrounding objects but may contaminate the surrounding air sufficiently so that a nearby person will breath in some of the germs.

Flies, by the peculiar construction of their feet, and by their habits of frequenting filthy places, carry many disease germs on their feet. Biting flies transfer infective material directly from the blood stream of a sick individual to that of a healthy one, as also do lice, fleas, bedbugs and mosquitoes.

Through food are transmitted mostly the intestinal infections, though diphtheria, septic sore throat, scarlet fever and tuberculosis are often traced to infected milk. Typhoid, paratyphoid, dysentery and cholera may all come from a contaminated water supply. Insufficiently cooked pork may lead to trichinosis. The typhoid "carrier" in the kitchen can infect, in the preparation of a single meal, enough food to cause fifty to a hundred cases of typhoid fever, as at a church supper.

4. *Disease Carriers.*

A "carrier" is a person who harbors and transmits pathogenic parasites without showing the usual evidences of infection. It is extremely difficult to apprehend such individuals because of the fact that they show no symptoms of disease. The eradication of communicable disease is made immeasurably

more difficult for this reason and eternal vigilance in matters of personal hygiene become all the more important. Following is a list of diseases in which carriers play a part, with the proportion of population that have been found to be carriers.

Disease	*Number of Carriers*
Typhoid and paratyphoid fevers.	One in 1000 population.
Cholera	Three per cent of persons having the disease.
Dysentery,—bacillary	One to 5 per cent of cases.
Dysentery,—amoebic	Ten to 25 per cent of population in endemic centers.
Hookworm infections	Large percentage of population in infected regions.
Diphtheria	One per cent of population.
Meningitis (meningococcus)	Twenty per cent of population in epidemics.
Pneumonia (pneumococcus)	Forty per cent of cases for a month or longer after convalescence.
Streptococcus infections	Ten to 20 per cent of population in epidemics.
Tuberculosis	Latent cases in great abundance.
Malaria	Ten per cent of population in malarious regions.
Syphilis	Latent cases numbering from one to five per cent of population.
Gonorrhea	Unknown. Large number of carriers.

5. *Prophylactic Measures.*

Safe water supply (chlorination if necessary).
Safe milk supply (pasteurization compulsory).
Safe sewage disposal.
Small pox vaccination (compulsory for school attendance).
Typhoid vaccination (for contacts especially).
Diphtheria vaccination (for non-immunes only).
Early detection of cases of communicable disease.
Isolation and quarantine of persons infected with communicable disease.
Detection of mild cases (with quarantine).
Detection of carriers (with education).
Destruction of flies and mosquitoes, with their breeding places.
Destruction of vermin.
Destruction of rats.

6. *Suggestions for the Biology Teacher.*

a. Demonstrate to class disease organisms.
b. Visit public health or hospital laboratory with class if possible.
c. Get health officer to talk to biology class.
d. Have class obtain public health literature to incorporate with classroom notes.

e. Emphasize always:

Sources and modes of infection,
Ways and means of preventing infection,
Necessity of personal hygiene.

B. Physiology.

1. *Health and Disease.*

a. *Health.*

Health is that condition of the body and mind in which all the functions are normally performed. This includes resistance to infection and disease, factors which are not readily observed. For instance, prolonged fatigue or undue exposure to excessive heat and cold will so influence certain functions of the body that infection will take place which ordinarily would not otherwise. One of the earliest instances on record of the effect of lowered resistance was demonstrated by Pasteur. The domestic fowl is very resistant to anthrax infection. When hens stood in a pan of ice water over night, however, infection with anthrax bacilli was easily accomplished. The growing boy or girl likewise, exhausting themselves by undue fatigue and exposure, are placing themselves open to the first infection that comes along.

b. *Organic Diseases.*

The organic diseases such as diabetes and cancer are as the name indicates, a state of improper functioning of various organs of the body. As a rule, the cure of the organic diseases are a minor factor in the field of "public health"; they do not form a menace to the public at large but are matters of individual concern only. The prevention of the organic diseases is becoming of more and more importance, however, as the field of preventive medicine develops.

c. *Communicable Diseases.*

The communicable diseases, such as typhoid fever, diphtheria and tuberculosis, are those caused by micro-organisms and may be communicated from one person to another. They are the first concern of a health officer for several reasons:—economically, they are tremendously expensive to a community in sickness, temporary or permanent disability, and death; they initiate damage which often ends in organic disease; they unduly increase the death rate of a community; unless checked, they rapidly spread into epidemics which paralyze the normal business and social life of a community (as the influenza epidemic of 1918).

2. *Heridity.*

One of the best protections which we have against disease, one that education and environment have but a limited power to improve, is that of heredity. In the present generation many deplorable conditions exist which we are unable to cure. These conditions are preventable, however, and our duty to future generations is to see that they get good human protoplasm. Mendel has shown how good and bad traits are transferred from generation to generation or skip a generation to reappear in the grandchildren, continuing on for centuries. The principal factors starting such lines of defectives are inbreeding, syphilis, alcohol, nervous or physical diseases, mental or nervous exhaustion, and excesses and poisons of all kinds. For instance, syphilitic infection may be transferred "unto the third and fourth generation".

In addition to the above there is a group of persons defective to a lesser degree. They are normal mentally but lacking in immunity to certain diseases, passing along to posterity, not the infective agent, but susceptibility to the in-

fective agent. Immunity or susceptibility to tuberculosis, cancer, epilepsy and hay fever are examples of such instances.

3. *Immunity.*

It is not important that the high school student be weighted down with the various theories of immunity. Certain phases of immunity should be emphasized however.

Immunity is the power which certain living organisms, plant or animal, have of resisting disease. This resistance is due to specific properties of the blood termed "antibodies", acting either by lysis (dissolving), by phagocytosis (digesting) or in other manners not so readily understood.

Immunity may be either natural (inherited) or it may be acquired by passing through a course of the disease, or artificially by vaccination or immune serum.

"Toxins" are poisonous substances secreted by microorganisms, and it is due to these toxins that most bacteria have their deleterious effect. Every child is familiar with poison ivy, how it grows by the roadside and will poison many individuals coming in contact with it. The diphtheria bacillus, likewise, is another plant, very tiny, which grows in the throat of people, producing a poison, a toxin, that is absorbed into the body tissue, causing sickness and death.

"Antitoxin" is the substance produced by the body to neutralize the toxin. It has been found that antitoxin produced in the horse against diphtheria will also neutralize the diphtheria poison in man. Therefore, it has become common practice to produce in horses this immune material, and when a person contracts diphtheria, inject some of the already prepared antitoxin. This is a sure cure when given the first day of the disease. In tetanus, meningitis, anthrax and pneumonia, more or less efficient serums have likewise been produced.

A "serum" as the name indicates is the product of the blood stream of man or animal. A "vaccine", on the other hand, is a suspension of bacteria or bacterial products. Often these terms are confused.

By "vaccination" a person is rendered immune to disease. It is common knowledge that a course of typhoid fever renders an individual immune to future infections. By injecting some of the dead typhoid bacilli into a person, the same immune body processes are set to work, but infection from vaccination is impossible because the organisms are dead. In small pox, rabies, diphtheria, cholera and dysentery, efficient vaccines have also been produced.

4. *Ventilation.*

No single factor has such marked physiological results and such apparent effect on the health as does ventilation. In the Black Hole of Calcutta all but a score of 146 men died in a single night because of insufficient ventilation. The beneficial effects of good air are equally well-known. Hopeless consumptives are brought back to health and vigor through its aid.

There are several points to be taken up in ventilation. Excessive dust in the air is deleterious, as well as any pathogenic bacteria that may be floating around (as in an amusement hall). The changes in the atmosphere that take place by human occupation are (1) reduction of oxygen, (2) increase of carbon dioxide, (3) increase of organic matter from lungs, mouth and teeth as evidenced by various odors, (4) increase of atmospheric temperature and (5) increase of humidity due to moisture given off from the breath and skin. Neither the reduction of oxygen nor increase of carbon dioxide are of themselves sufficient to produce, under ordinary conditions, the feeling of discomfort observed in a poorly ventilated room. Temperature, humidity and motion are all factors. Ordinarily, the air should be changed at the rate of 2000 cubic feet per hour for each occupant. The temperature of 134 school rooms studied

in New York City indicated that the smallest amount of respiratory trouble took place at 66.6° F. As the temperature increased even only two or three degrees, respiratory infections increased many times. The amount of moisture in the air for comfort depends on temperature and air movement. A high temperature with high humidity and no air movement is exceedingly uncomfortable while the same temperature with low humidity and slight air movement is very tolerable, since good body evaporation is given.

For health then, as well as comfort, the air should be cool, 65° to 68° F., but not cold; it should have gentle but not excessive motion; it should be free from poisonous or offensive fumes and large amounts of dust.

5. *Personal Hygiene.*

The Life Extension Institute in its book "How to Live" gives the following rules for right living:

(a) Air.

1. Ventilate every room you occupy.
2. Wear light, loose and porous clothes.
3. Seek out-door occupations and recreations.
4. Sleep out if you can.
5. Breathe deeply.

(b) Food.

6. Avoid overeating and overweight.
7. Eat sparingly of meats and eggs.
8. Eat some hard, some bulky, some raw foods.
9. Eat slowly.

(c) Poisons.

10. Evacuate thoroughly, regularly and frequently.
11. Stand, sit and walk erect.
12. Do not allow poisons and infections to enter the body.
13. Keep the teeth, gums and tongue clean.
14. Use sufficient water externally and internally.

(d) Activity.

15. Work, play, rest and sleep in moderation.
16. Keep serene.

The object of all this is so to improve the individuals condition in relation to his environment so that instead of becoming a victim of his environment, he will be able to cope with and overcome those obstacles to his health and well being.

C. Zoology.

There are a large number of animal parasites which are of greater or less importance in public health. The zoology teacher therefore should have little trouble in carrying public health through the entire course. The following list is by no means complete for animal parasites infecting man, but covers the more important forms:

(The items starred are to be given chief emphasis.)

1. *Protozoa.*

a. Rhizapoda—

Entamoeba coli,
*Entamoeba histolytica,
Entamoeba buccalis.

E. coli is a harmless organism in the intestinal tract, its only importance being its close resemblance to histolytica, for which it is sometimes mistaken. E. buccalis is found in association with decayed teeth.

E. histolytica is the cause of amoebic dysentery. The chief factor in the spread of the disease is the encysted amoebae in the stools of convalescent or healthy carriers. When such a person is engaged in the preparation of food, he is a particular source of danger. Contaminated water supplies are also dangerous.

b. Flagellata—

*Spirochaeta vincenti,
Spirochaeta duttoni,
Spirochaeta icterohemorrhagiae,
Spirochaeta refringens,
*Treponema pallium,
Leptospira icteroides,
Trypanosoma gambiense,
Trypanosoma rhodesiense,
Leishmania donovani.

S. vincenti, found in conjunction with the fusiform bacillus, causes Vincent's Angina. During the war, this was sometimes called "trench mouth". Infection is caused by direct transfer of saliva. The organism also causes a veneral infection called the "fourth venereal disease".

S. duttoni is of small significance in this country, but in Africa is a great menace as the cause of relapsing fever. The tick, Ornithodorus moubata, is the transmitting agent.

S. icterohemorrhagiae is the cause of epidemic jaundice, the rat being the carrier of the disease. The organisms appear in great numbers in the urine and are capable of penetrating the unbroken epithelium. Prevention consists in warfare against rats.

S. refringens is of little pathogenic significance except as it is associated with T. pallidum for which it is sometimes mistaken.

T. pallidum, the cause of syphilis, is transferred either through sexual contact or by kissing, the use of infected eating utensils, drinking cups, etc. It is estimated that eight per cent of the population is infected with syphilis. Prevention consists in proper treatment of those already infected, education in matters of social hygiene, repression of prostitution, abandonment of the use of common drinking cups, towels, toilet articles and eating utensils.

L. icteroides, recently demonstrated as the etiological agent in yellow fever, is transmitted by the mosquito, Stegomyia calopus. Yellow fever, once epidemic annually in the United States, and the scourge of the white man in the tropics, now is known to exist in only two spots in the world,—a small area on the west coast of South America and a small area on the east coast of Africa. Soon it will be an extinct disease, conquered by applied principles of public health.

T. gambiense and T. rhodesiense cause African sleeping sickness, being transferred by the tse-tse flies, Glossina palpalis and Glossina morsitans.

L. donovani may be transmitted from person to person by the bedbug, bringing about the disease kala-azar.

c. Infusoria—

Balantidium coli.

B. coli is the only ciliate of importance to man. A common intestinal parasite of the hog, it may cause severe dysentery in man.

d. Sporozoa—

*Plasmodium malariae,
*Plasmodium vivax,
*Plasmodium falciparum.

These malarial parasites, causing respectively quartan, tertian and aestivo-autumnal fevers, are transmitted by the anopheles mosquito. The cost of malarial infections is enormous,—in Illinois, more than $2,000,000 annually. Prevention consists in warfare on the mosquito by destruction of breeding places and by screening of homes so that neither the malaria patient can be bitten to infect the mosquito, nor the healthy person bitten to become infected.

2. *Platyhelminthes or Flat Worms.*

3. Trematodes—

Clonorchis endemicus (liver fluke),
Fasciolopsis buski (intestinal fluke),
Paragonimus westermanii (lung fluke),
Schistosoma hemotobium (blood fluke).

The flukes, while of more or less importance from a health standpoint elsewhere, are of no great significance in the United States.

b. Cestodes—

Tenia saginata (pork tapeworm),
Tenia solium (measly pork tapeworm),
Hymenolepis nana (dwarf tapeworm),
Dibethriocephalus latus (broad Russian tapeworm),
Tenia echinococcus (dog tapeworm).

Tenia saginata, the pork tapeworm, is of universal distribution, infecting man through the indigestion of imperfectly cooked pork.

Tenia solium, the measly pork tapeworm, is common in Europe, but rare in the United States.

Hymenolepis nana (Tenia nana) or the dwarf tapeworm, while the smallest of human tapeworms, is the commonest. In a Washington orphanage, 5 per cent of the children were infected.

Dibothriocephalus latus, the broad Russian tapeworm, has been reported in the United States. The embryo develops in fish, and is not destroyed by salting, drying, or other ordinary methods of preserving fish.

Tenia echinococcus passes its adult stage in the dog, being transferred to man by contact. If a dog contaminates a person with a single egg and this egg be ingested, hundreds of larvae will develop.

Prevention of tapeworm infection consists in careful attention as to what goes into the mouth. Dogs and cats should not be allowed to lick the face and mouth of a person; hands should be thoroughly washed before meals, after handling animals; meat and fish should not be consumed in a raw state.

3. *Nemathelminthes or Round Worms.*

a. Nematodes—

Trichuris trichiura (whip worm),
*Trichinella spiralis (trichina),
*Necator americanus (American hook worm),
Ancylostoma duodenale (European hook worm),
Ascaris lumbricoides (eel-worm).

T. trichiura, the whipworm, while one of the commonest of human parasites, is one of the least dangerous.

T. spiralis causes not only a most painful but often fatal disease. Insufficiently cooked pork is the source of infection in man. Hogs may become infected by eating the meat of other hogs or rats.

Hookworm infections in the Southern States cost annually enormous sums of money. The source of infection is the feces of infected persons, infection usually taking place through the skin, sometimes by mouth through infected drinking water, soiled fingers, etc. Prevention consists in proper disposal of bowel discharges, prevention of soil pollution, personal cleanliness and the wearing of shoes.

Ascaris lumbricoides is the most common human intestinal parasite, especially in children. Because the eggs will remain alive for years, children playing where soil pollution has existed, infect themselves through soiled fingers.

4. *Arachnoids.*

a. Acarines—

Ornithodorus moubata (tick),
*Dermacentor andersoni (tick).

The mites and ticks are chief in interest among the acarines. The mites transmit no specific disease, but are most troublesome in causing the "itch". Among the ticks, O. moubata is a carrier of S. duttoni, causing relapsing fever, and D. andersoni transmits the organism of Rocky Mountain spotted fever. War on the tick consists of clearing and cultivating tillable lands, burning over foothills, killing of small wild animals and dipping in arsenical solutions domestic animals.

5. *Insects.*

a. Siphunculata—

*Pediculus capitis (head louse),
*Pediculus vestimenti (body louse),
*Phthirius pubis (crab louse).

P. capitis, the head louse, is not only a source of great annoyance but may carry various diseases from person to person.

P. vestimenti, the "cootie" of army life, likewise transfers diseases directly from one person to another. In the war, trench fever, typhus fever and relapsing fever assumed tremendous proportions from this cause.

P. pubis, the crab louse, prefers the white race to other colors. It has not been known to transmit disease but is a great nuisance.

Warfare on lice consists in "delousing" infested individuals. For head lice, an annointment of kerosene and vinegar, equal parts, is usually effective. Body lice must be removed from the body and also from clothing. Heat or chemicals is most efficient for the latter purpose, while ammoniated mercury serves for the former. For the crab louse the hair of the groins should be shaved.

b. Hemiptera—

*Acanthia lectularia (common bedbug),
Conorhinus sanguisuga (Mexican bedbug).

These two forms of bedbugs may transmit plague, relapsing fever, typhus fever, kala-azar or other diseases. Infestation with bedbugs may appear at most unexpected times or in unexpected places. Liberal use of gasoline or kerosene quickly destroys them.

c. Siphonaptera—

*Xenopsylla cheopis (rat flea).

Among the fleas, any form living on the rat is dangerous, because of transferring to man plague infection. The solution of the problem is the extermination of rats.

d. Diptera—

*Musca domestica (house fly),
Glossina palpalis (tse-tse fly),
Sarcophaga carnaria (flesh fly).

Among the flies, M. domestica is important because of its great prevalence and the peculiar construction of its feet, whereby filth and disease germs are carried to food for human consumption. The high typhoid fever rate in the Spanish-American War has been attributed largely to flies.

G. palpalis is the agent responsible for the transmission of African sleeping sickness.

S. carnaria is of great importance in time of war, from the fact that it lays its eggs in open wounds, where the maggots hatch out.

The destruction of fly breeding places and the screening of homes are the most effective measures in combatting flyborn diseases.

6. Culicidae—

*Anopheles maculipenis (malaria mosquito).
Stegomyia calopus (yellow fever mosquito).

Besides being great pests, certain species of mosquitoes are great menaces. Chief among these are A. maculipenis, the carrier of malaria, and S. calopus, the carrier of yellow fever. Screening of homes and destruction of mosquito breeding places are the most productice means of warfare.

7. *Parasitism.*

a. Endoparasites—

Amoeba,
Spirochetes,
Malaria plasmodium,
Flat worms,
Round worms.

The animal parasites have feeble antigenic properties,—that is, they have feeble powers of producing immunity in the host. In malaria, syphilis and hookworm infection, one attack of the disease, when cured, does not protect against future attacks. In contrast to this, many of the plant parasites (bacteria, as the typhoid bacillus, produce lasting immunity. There are therefore no vaccines or serums for the animal parasites and protection must be secured by sanitation and hygiene.

b. Ectoparasites—

Mites,
Ticks,
Lice,
Fleas.

The ectoparasites are facultative, being able to live for long periods away from the human body. They produce, as a rule, no toxic substances themselves, but are dangerous because of the parasites which they themselves harbor and may transfer to man.

8. *Evolution.*

a. Immunity—

Malaria,
Syphilis,
Yellow fever.

Through the centuries, man has acquired a natural immunity to syphilis not originally held. In malarial districts the natives gradually become little affected by the disease. Before yellow fever became practically extinct, the natives of tropical countries where the disease existed were entirely immune to the disease, but the white race, when exposed, suffered enormously.

9. *Heredity.*

a. Infections—
Syphilis.

Syphilis is the only infectious disease known that is transmitted from generation to generation, "even unto the third and fourth generation". Its ultimate eradication is thus made more difficult.

D. Botany.

1. *Schizomycetes or Bacteria.*

a. *Non-Pathogenic Bacteria.*

There are more than four hundred kinds of bacteria harmless to man. They are present in the air, soil, water and food. Many of them play an important role in industry.

b. *Pathogenic Bacteria.*

There are twenty-five or thirty kinds of bacteria pathogenic to man, of which the following are the most important:

Bacillus of tuberculosis (tuberculosis),
Bacterium diphtheriae (diphtheria),
Bacillus typhosus (typhoid fever),
Bacillus paratyphosus (paratyphoid fevers),
Bacillus dysenteriae (dystentery),
Bacillus anthracis (anthrax),
Bacillus pertussis (whooping cough),
Bacillus of Ducrey (chancroid),
Bacillus pestis (plague),
Bacillus tetani (lockjaw),
Bacillus Welchin (gas gangrene),
Streptococcus (sore throat),
Pneumococcus (pneumonia),
Meningococcus (meningitis),
Gonococcus (gonorrhea),
Staphylococcus (skin infections).

Respiratory Diseases.

These include diphtheria, pneumonia, meningitis, tonsilitis, whooping cough and poliomyelitis, the etiological agent for all of which is known. In addition are influenza, the common cold, measles and scarlet fever, the causes of which are uncertain but which are spread in a manner similar to the others.

The mode of infection is transfer of salivary secretions (directly or indirectly from one person to another. Prevention consists in covering up the cough and the sneeze, abstaining from smearing saliva by means of the fingers over everything and everybody who happens to come in the way, and in keeping out of the mouth all foreign objects, including the fingers.

Intestinal Diseases.

These include typhoid and paratyphoid fevers, bacillary dysentery and cholera.

The mode of infection is direct or indirect transfer of intestinal or bladder discharges from a sick person or a carrier to the mouth of a well per-

son. This takes place on the fingers, in contaminating food and water or by flies. Prevention consists in isolation of all persons known to harbor the germs of these diseases in their persons, chlorination of water, pasteurization of milk, destruction of flies, and careful washing of the hands after bowel movement or bladder discharge, especially if food is to be handled.

Insect Born Diseases.

Bubonic plague is of bacterial origin, transferred by the rat flea; typhus fever is probably of bacterial origin, transferred by the louse. Malaria and yellow fever are both protozoan diseases.

Transmission of both plague and typhus takes place by the bite of infected insects which have fed on sick rats in the case of plague and sick persons in the case of typhus. Prevention consists in destruction of rats, isolation of patients and annihilation of vermin.

Genito-Urinary Infections.

Gonorrhea and chancroid are of bacterial origin. (Syphilis is caused by a spirochete—T. pallidum.) The venereal diseases are contracted by direct personal contact with infected individuals and less often indirectly by contact with articles freshly soiled with the discharges of such individuals. Prevention consists mainly in education in matters pertaining to social hygiene. Persons in the infective stage should be so treated that infection by indirect contact will not take place.

Abrasion Diseases.

Anthrax, tetanus, gas bacillus infection, streptococcus and staphylococcus infection and rabies are all abrasion diseases. Prevention consists in keeping the infecting organism out of wounds and cuts. In anthrax this means the destruction of infected hides and hair, while in rabies usually the muzzling of all dogs is enforced.

c. *The Higher Bacteria (Trichobacteria).*

Leptothrix,
Actinomyces,
Streptothrix (Nocardia).

Leptothrix infections are reported from time to time, but are not common. Actinomycosis appears as a little lump, often on the jaw, going on to supperation. Streptothrix infections are found in brain abscesses, cerebro-spinal meningitis, pneumonia and other pathological conditions.

2. *Blastomycetes or Yeasts.*
Saccharomyces.

The pathogenic yeasts may infect the lungs, the eyes and more usually the skin.

3. *Hyphomycetes or Molds.*

Trichophyton,
Aspergillus,
Penicillicum.

The majority of molds are not pathogenic for human beings. Some however are true parasites, causing such diseases as ringworm, favus and thrush.

4. *Algae.*

Astrionella,
Diatoma,
Spirogyra.

The algae are of importance chiefly with water supplies, more especially where reservoirs for storage of water are used. They are not injurious, at least to people in good health. Decomposition of the algae by bacteria, however, may contribute to intestinal disorders. The algae produce various tastes and odors some of which are extremely obnoxious, others of which are very agreeable. Thus some waters smell fishy or grassy or like cucumbers or are aromatic, due to the growth of algae. Such waters are not necessarily injurious to the health.

5. *Mushrooms.*

There are about a thousand varieties of mushrooms, more than seven hundred of which are edible. In the genus amanita, however, there are nine forms which are deadly poisonous.

6. *Weeds and Grasses.*

The only forms of weeds and grasses which can produce hay fever are those which produce pollen that is windborn.

Hay fever is not a communicable disease, but it is so serious and so easily preventable that it is included in most campaigns of preventive medicine.

Ambrosia artemisiaefolia (common ragweed),
Ambrosia trifida (giant ragweed),
Ambrosia psilostachya (western ragweed),
Partherium hysteriophorus (false wormwood),
Iva ciliata (marsh elder),
Iva auxillaris (western elder),
Sorghum halapeuse (Johnson grass),
Phalaris canarieusis (Canary grass),
Sporobolus indicus (Sweet grass).

The above is but a small portion of the list of weeds and grasses producing hay fever. The majority of weeds, which are found in great profusion and the pollen of which is abundant and wind-borne, are the cause of hay fever to some persons.

Since from one to two per cent of the population suffer from hay fever at some period of the year, the prevalence of the disease is apparent. Prevention consists mainly in eradication of the weeds and vaccination.

7. *Sumach Family.*

Rhus toxicodendron (poison-ivy),
Rhus vernix (poison sumach).

Among the higher forms of plant life the poison ivy and poison sumach are the only members poisonous to man.

8. *Parasitism.*

As an example of ideal parasitism in the plant kingdom, the tubercle bacillus stands out prominently. The organism does not kill its victim quickly, but causes a lingering disease allowing the parasite to multiply and spread to many other hosts.

Practically all of the pathogenic bacteria are parasites and require extremely favorable conditions outside the body to multiply at all. In fact, some of the bacteria can be grown only with the greatest difficulty under laboratory conditions. Most of the pathogenic plant parasites have strong antigenic properties,—that is, one attack of the disease produces lasting immunity against future attacks. This does not prevent the person from becoming a "carrier" of the organism.

9. *Heredity.*

The bacterial diseases are not inherited. Susceptibility to a disease is inherited, however, so that one family may have a greater susceptibility to tuberculosis, when exposed to infection, then another family. Immunity to disease is transferred by the mother to the offspring, this immunity lasting for six to twelve months. Susceptibility or immunity to hay fever is often inherited.

The Laboratory Approach to First Year Science

Professor Geo. W. Hunter, Galesburg

During the years just prior to our entering the World War the writer was extremely interested in the problem of laboratory approach with beginning students in the secondary school. This paper results in part from his practical experience as a teacher and in part from a questionnaire sent out to a considerable number of first year high school students as well as a number of those who have been in secondary school for over one year and who are taking a second year of science.

The greater number of the students were boys of the DeWitt Clinton High School, New York City, at that time one of the largest boy high schools in the world. The other students were picked from girls, boys, and mixed schools outside of New York City. In most cases the schools were in small urban communities. A few rural high schools were included in the questionnaire. The schools were located in Connecticut, Massachusetts, New Jersey, New York and Pennsylvania, and were all considered typically good high schools.

Like every scientist the author felt that the questionnaire method was of dubious value unless carefully safeguarded. This was done, first by throwing out all answers that appeared to be nonsensical or irrelevant; second by having a period at the end of the course set aside for the purpose of writing the questionnaire and third and most important by having those who gave out the questionnaires explain to the students taking it the value of their honest help in giving answers which represented their own honest opinion. The students taking the questionnaire were between the ages of thirteen and twenty, the majority collecting around the ages of fifteen or sixteen.

Two sets of students took the questionnaire in each group of schools. These were students taking science for the first year and those who had had one year or more of science. The same series of questions were asked each group of students both in the large cities and small community schools. The questions following were part of a series of questions in which the student was asked first to give the school, age, sex, and date of writing the questionnaire. Questions on interest, instinct, (collecting), were followed by the one on methods of learning, This was expressed in the following form: Which of the following ways do you like to learn biology (other sciences) best? Put a check before your choice;

(a) By experiments or laboratory work you do yourself.
(b) By demonstrations or experiments performed by the teacher
(c) By field or museum trips.
(d) By class discussions on assigned lessons.
(e) By reference or outside reading.
Please give a reason for your above choice.

This questionnaire was answered by 1572 beginning students in the DeWitt Clinton High School and 847 students of both sexes in 15 high schools outside of New York City. The first year science studied was elementary biology in all cases. In the DeWitt Clinton High School 391 students said they preferred to do the experiments or laboratory work by themselves; 460 preferred demonstrations or experiments performed by the teacher; 349 preferred field

or museum trips (every student in the course was required to go on three field or museum excursions during the year, one a general ecological and insect identification and collecting excursion in the fall to Van Cortland Park, a second excursion in the winter to the American Museum of Natural History, largely centered on the study of birds and the study of trees; a third excursion in the early spring to the New York Aquarium for the study of living fish. These excursions were carried out under laboratory conditions, each student being furnished with a mimeographed direction sheet and being required to write up the results for his note book. All papers were checked up by the instructor at the time to prevent copying or other collusions.) d. 294 preferred class discussions on assigned lessons. 56 mostly superior students preferred reference or outside reading as a means of learning and 22 gave no choice.

In the schools outside of the city of New York 225 of the 847 students preferred experimental or laboratory work performed by themselves. 186 preferred to have demonstrations or experiments performed by the teacher; 262 enjoyed the field trips best; 138 preferred class discussions on assigned lessons; 22 preferred to do outside reading and 14 gave no choice.

Later the author attempted to make an analysis of these figures with an age correlation. While there is not space in the present article to discuss this fully, we may state that in the first year students, the younger students, those grouped in the age group of 14, 15, 16, preferred to have demonstrations made rather than to do the laboratory work by themselves. The older students, those of 17, 18, 19 years of age more preferred to do the laboratory work by themselves. This age correlation became much more evident in the group of students who have taken one year of science privious to answering this questionnaire. The questionnaire was given out to 872 students studying chemistry, physics or advanced biology in the DeWitt Clinton High School. Of these 255 preferred to do laboratory work by themselves; 246 preferred demonstration method; 173 field or museum trips; 165 class room discussion; 20 reference or outside reading; and 13 gave no choice. It may be said in this connection that a large number of second year students elect chemistry in the DeWitt Clinton High School and that it was this group of students much more than older ones who preferred the demonstration method in the laboratory.

In the 15 schools outside of New York City, 496 advanced science students answered the questionnaire. Of these an overwhelming preponderance or 341 preferred the experimental method while 107 preferred the demonstration method; 31 only chose the museum-field trip; 17 did not answer the questionnaire. Owing to a mistake in making out the mimeographed sheet the two methods d and e were omitted from this questionnaire so that we do not know the reactions of the above students with reference to those types of learning.

Here again a study of age correlation shows the more mature students preferred the experimental method as against the demonstration method.

These figures although not at all conclusive and although obtained by the questionnaire method are nevertheless significant. We are bewailing the apparent fact that science is losing ground in the secondary schools. Are we adapting our methods of teaching to the capacity of our students? All too frequently in large classes of students in elementary science, the laboratory becomes a place where the student gets a distrust rather than a love for it. May this not be due to the fact that many of our young teachers fresh from the college laboratories are trying out the very same laboratory methods which they learned to enjoy and to rely upon as more mature students? Might it not be well for all of us to think over these figures in terms of youth and try to put ourselves in the place of the beginner in science? These beginners wished to have leadership in the laboratory. May we not give it to them?

4. CLASSICS SECTION

The Classics Section of the Conference was held in the Congregational Church with Professor H. V. Canter presiding .

Miss Fay Miller was elected a member of the Executive Committee. The committee now consists of the following members: Miss Effie Case, Lyons Township High School, La Grange, chairman; Miss Sophronia Kent, Moline High School, Secretary, and Miss Fay Miller, Belleville Township High School, Belleville.

The program opened with a report presented by Dean Roy C. Flickinger of Northwestern University on Progress of the Classical Investigation. The report follows:

The Classical Investigation: The First Year's Work As Conducted by the Special Investigating Committee: Andrew F. West, Chairman, W. L. Carr, Mason D. Gray, and W. V. McDuffee

The work of the Classical Investigation which was officially begun September 1, 1921, under the general direction of the Advisory Committee of the American Classical League, has gone forward during the school year 1921-1922 along the lines indicated in the Preliminary Report as printed in the Classical Journal for October 1921.

W. L. Carr and Mason D. Gray have been directly in charge of the studies relating to the objectives in the teaching of Latin and to the content and method employed to realize these objectives, including the testing program and the controlled experiments. W. V. McDuffee has been directly in charge of extensive statistical studies which are being carried on with the cooperation of the United States Bureau of Education and the College Entrance Board. A brief report of these activities is here given under the various appropriate headings.

1. General Testing Program

For the purpose of discovering to what extent the present course in secondary Latin makes it possible for pupils to attain the various objectives commonly ascribed to the study of Latin, an extensive testing program was inaugurated at the beginning of the school year 1921-1922. The program will continue through the school year 1922-1923. The data secured will provide a basis for recommendations concerning the content and methods in the course. The tests so far employed are designed to measure growth in various abilities in the fields of English, Modern Language, and History, as well as in the field of Latin itself. A complete list of these tests is given on page 2.

The testing program is beyond question the most extensive and comprehensive ever undertaken in any field. The schools cooperate by paying for their own tests and by scoring the papers and tabulating and reporting results. The number of schools thus cooperating is 750, the number of teachers 4,200, the number of pupils 108,425 to date. It must be borne in mind that this testing program differs from others in that the tests are repeated with the same pupils with a view of measuring growth in the various abilities tested through one, two, three, and four semesters. It is hoped that some provision can be made for carrying the program through the whole four years of the high school course.

Over 800,000 tests have already been given and this number will probably be doubled.

The analysis of data and the interpretation of results are under the direction of E. L. Thorndike, W. C. McCall, W. W. Charters, B. R. Buckingham, V. A. C. Henmon, S. B. Davis, M. E. Haggerty, M. J. Van Wagenen, B. L. Ullman, and T. J. Kirby. The results of the tests given during the first year are being reported to the individual schools along with norms for the various grades. Complete information regarding content and method is being secured from those schools in which any objective is found to have been attained with conspicuous success.

II. Creation of Tests

Nine of the twelve tests already used in the survey to date had to be created. The construction and standardization of these tests has proved to be one of the most difficult as well as the most significant of our activities during the past year. Dr. A. J. Inglis, whom we early consulted on this matter, estimated that $1500 would be required for the construction of each test. Thanks to the generous cooperation of many volunteer workers the actual cost has been much less. Dr. B. R. Buckingham says: "This battery of Latin tests alone, although it is a by-product of your work, is of great importance." A list of the tests follows:

The Thorndike Test of Word-knowledge (five forms).
The Carr English Vocabulary Test (five forms).
The Buckingham-Coxe Spelling Test (four forms).
The Charters Diagnostic Language and Grammar Test (four forms).
The David-Hicks Test in Roman History (two forms).
The Ullman-Kirby Latin Comprehension Test (two forms).
The Godsey Diagnostic Latin Composition Test (two forms).
The Pressey-Tyler Test in Verb-forms (two forms).

The Thorndike-McCall Reading Scale, the Henmon Latin Vocabulary and Sentence Test, and the Henmon French Vocabulary and Sentence Test have been made available for our use through the courtesy of their authors and publishers.

Several new tests are in preparation, and it is hoped that they will be ready for use before the end of the present school year. These new tests are:

A test by E. L. Thorndike to measure the effect of the study of Latin and mathematics in developing power in relational thinking.

A test by Miss Barbara M. Hahn, under the direction of Dr. Allen Abbot, to measure the effect of the study of Vergil on the development of literary appreciation.

A test by Barclay W. Bradley to measure the effect of the study of Latin on the development of certain ideals, such as patriotism, fidelity, self-sacrifice, and social service.

A test by Miss Lou V. Walker under the direction of Dr. V. A. C. Henmon to measure the extent to which Latin students understand Latin quotations, words, and phrases in English books and current literature.

A test by B. L. Ullman to measure the extent to which Latin students understand classical allusions in English literature.

A test by Mason D. Gray to measure the relative ability of Latin pupils to master the technical vocabularies of other high school subjects.

A test by Dr. C. S. Pendleton and Dr. C. E. Little to measure growth in active English vocabulary.

A test by Dr. A. I. Roehm to ascertain the number and range of English words of Latin origin for which high school pupils have the same concrete feeling as for words of Anglo-Saxon origin.

A Prognostic Latin Test by Dr. T. H. Briggs and Dr. E. L. Thorndike to predict the probable success of eighth and ninth grade pupils in the study of Latin.

III. State Surveys

It has seemed wise to supplement our general testing program which covers the entire country, by an intensive survey in a number of states. It is conceivable that our general testing program has automatically selected schools better than the average. These supplementary state surveys, which will cover every type of school will serve to correct any such condition. The following states are conducting surveys in cooperation with our committee:

Iowa, under O. E. Klingaman, State University of Iowa.
Michigan, under Clifford Woody, University of Michigan.
Wisconsin, under S. C. Garrison and Charles E. Little, George Peabody College for Teachers.
Mississippi, under Alexander L. Bondurant, University of Mississippi.
New York, under Elmer E. Bogart and S. Dwight Arms, University of the State of New York.

IV. Controlled Experiments

For the purpose of discovering the conditions most favorable for maximum attainment of the various objectives sought, several controlled experiments have been organized:

1. Controlled experiment in teaching English derivatives in seven high schools of Philadelphia, Pa.,* Harrisburg, Pa., and New Brunswick, N. J., under Dr. Arthur J. Jones and A. Duncan Yocum, with thirty-three teachers of Latin and English.

2. Controlled experiment in teaching English grammar through Latin in ten schools in Iowa, under Dr. B. L. Ullman and Dr. Thomas J. Kirby.

3. Controlled experiment to determine how Latin can be made a more effective instrument for the mastery of modern languages, in two high schools of Cleveland, Ohio, and one in Philadelphia, Pa., under Dr. V. A. C. Henmon and Dr. E. B. DeSauze.

4. Controlled experiment to determine how Latin can be made a more effective instrument in teaching the spelling of English words in five schools in Columbus, Ohio, under B. R. Buckingham.

5. Controlled experiment to determine how Latin can be made a more effective instrument in teaching historical perspective in four schools in Pittsburgh, Pa., under Dr. S. B. Davis and Dr. E. T. Sage.

V. Cooperative Group Projects

About 2,000 teachers are contributing without compensation about 30 hours of work each in a number of studies which should result in making Latin a more effective educational instrument. These studies deal mainly with applications of Latin to English and modern foreign languages.

1. An English word count embracing about 3,000,000 words from the Encyclopedia Britannica, the Literary Digest, the Saturday Evening Post, a group of representative high school text-books, and other selected material, for the purpose of determining on the basis of range and frequency of occurrence the 20,000 most important English words. This count is under the direction of Dr. Edward L. Thorndike of the Institute of Educational Research assisted

*See article in "School and Society" for July 8, 1922, "The Philadelphia Controlled Experiment in Teaching English Derivatives from Latin."

by Miss Edith Newcomb, Mrs. G. J. Ruger, Dr. Wren J. Grinsted all of whom are assistants in the Institute. About 300 teachers of Latin are cooperating, some individually and some in groups. The larger groups are in New York City, Philadelphia, Boston, Topeka, Richmond and Detroit. About two-thirds of the preliminary count is now completed, and we are adding a supplementary count of 500,000 words to be completed by Dec. 1, 1922. When completed, this study is expected to give us a representative conspectus of the actual passive vocabulary to be reasonably expected of students in and beyond the high school, as Thorndike's Teacher's Word book has done for the grades. On this basis we can proceed to estimate (1) the actual proportion of the classical element in the vocabulary of the educated English-speaking person; (2) the special Latin vocabulary from which these English words are derived; (3) the relative importance for English etymology of the Latin words in this vocabulary; and (4) the methods of Latin word-formation which have most contributed to the growth of the English vocabulary. This will undoubtedly contribute largely to the improvement of the teaching of Latin by giving us additional scientific basis for the selection of Latin vocabulary and the method of treating it in the classroom.

2. To reduce the results of the foregoing study to a form directly applicable to the teaching of Latin, an analysis of these 20,000 most important English words is now in progress at Indiana University under the direction of Dean H. Lester Smith and Dr. S. E. Stout. The analyses of the first two sets of 5,000 each have been completed by candidates for the doctorate. The analysis of the remainder will be undertaken as soon as the word-count is completed. This analysis will enable us to assign relative values to Latin words on the basis of their capacity to interpret the English language and will also make it possible to estimate from the pedagogical point of view the relative importance of the various linguistic elements that make up the English language. The analysis of the first 5,000 already shows that a large proportion of the Anglo-Saxon element in English has been learned long before the pupil reaches the seventh grade, and that the proportion of unfamiliar words that are of Latin origin steadily increases as we pass from those occurring most frequently to those occurring less frequently. In other words, from the pedagogical point of view the relative importance of the Latin element is materially greater than would be indicated by the actual proportion of Latin words in the English language.

3. Another indispensable study, complementary to 1 and 2 above, is the determination at what point in the list of Latin derivatives found in the 20,000 most important English words it may reasonably be assumed that pupils beginning Latin (whether in the 7th, 8th, or 9th grades) are familiar with the majority of words up to that point and unfamiliar with the majority of words after that point. A reasonably accurate determination of this point will make it possible for teachers and text-book writers to determine what English derivatives may be assumed to be familiar and may therefore be used as the basis for teaching Latin vocabulary and what derivatives are unfamiliar and therefore afford opportunity for the application of Latin vocabulary to a knowledge of English. This study is under the direction of Dr. Edward L. Thorndike.

4. The relationship of English vocabulary to Latin is also being attacked in a very comprehensive way from entirely different angle. A lexicon of Latin and Greek words with all of their English derivatives is being created. This enterprise involves a complete analysis of the New Oxford (Murray's) English Dictionary. About 75 Latin teachers, mainly from Chicago and the vicinity, are making this analysis under the direction of A. W. Smalley of the Hyde Park High School with the assistance of Professors Beeson, Bonner, and Buck of the University of Chicago.

5. A cooperative study has just been completed involving the collection, analysis, and organization for teaching purposes of classical ideas and allusions

in such contemporary English reading as falls within the range of high school students. This has been conducted by two graduate students in the Department of Latin at the University of Wisconsin under the direction of Prof. Frances E. Sabin. About 200 teachers cooperated in this project. Reports have been submitted in the form of two master's theses. On the basis of these studies tests are now being constructed for the purpose of determining to what extent under present methods of instruction Latin pupils show a better understanding of these allusions than non-Latin pupils do.

6. A cooperative study is in progress involving the collection, analysis, and organization for teaching purposes of Latin words and phrases found in contemporary English reading. This study is being conducted by a graduate student in the Department of Latin at the University of Wisconsin under the direction of Professor N. S. Slaughter. About 125 teachers have submitted analyses of books and magazines assigned to them. On the basis of this study a test will be constructed to measure the extent to which Latin pupils understand these words and phrases.

7. In order to furnish teachers with a rough basis for judging the quality of English used in translating Latin and thereby to raise the standard throughout the country, two translation scales are being constructed independently. One of the studies is under the direction of Professor S. A. Leonard of the Department of English, University of Wisconsin; the other is under the direction of Dr. M. B. Hillegas of Teachers College. About 80 teachers assisted in this work by submitting detailed reports suggesting the 14 passages to be selected as a basis for the scale, and about 250 teachers assisted by securing from their classes class-room translations of these 14 passages. About 300 teachers will cooperate in grading these translations.

8. A co-operative study is under way under the direction of Professor V. A. C. Henmon to determine the most common French words the learning of which will best be assisted by a knowledge of related Latin words, and, as a complement of this study, the determination of the Latin words the potential capacity of which to assist in the mastery of a French vocabulary is greatest. About 125 teachers are now cooperating.

VI. Individual Projects

A number of special projects have been undertaken and are now under way which attack problems presented in our preliminary report. The relation of each of these projects to the investigation as a whole will be clear from the brief descriptions here given:

1. A study is under way (under the direction of Professor M. V. O'Shea of the University of Wisconsin) to determine the extent to which graduates of colleges have since graduation made use of their knowledge of Latin for professional purposes or for personal enjoyment. About 200 colleges have assisted by supplying lists of graduates in accordance with a random sampling system carefully outlined. A similar study is in progress dealing with high school graduates who studied Latin four years and did not go to college.

2. Typical local examinations (question papers) have been secured from about 300 schools selected by random sampling from schools of all types in all parts of the country. These will be subjected to analysis for the purpose of determining the relative importance attached by teachers to the various immediate and ultimate objectives of the study of Latin.

3. Under the direction of B. L. Ullman of the State University of Iowa, a study is being made of grammatical errors found in English compositions and English grammar tests written by high school pupils. The purpose is to determine to what extent these errors involve principles which are involved also in an understanding of the elements of Latin grammar.

4. A study is being made to determine the percentage of Latin pupils who presumably will at some time during their high school course study each of the following subjects: French, Spanish, German, Biology, Physics, Chemistry, General Science, Geography, or Physiography, Mathematics, Music and Commercial Subjects. Information for this study has been furnished by nearly 100 schools.

5. A study is being conducted by Probessor W. L. Uhl, University of Wisconsin, to determine the relative amounts of time spent in the preparation of lessons in Latin and in the preparation of lessons in other subjects of the curriculum.

6. A study is being directed (by Dr. M. B. Hillegas, Teachers College, Columbia University), to determine the standard of English used in translating the Latin passages in the examinations of the College Entrance Board and in the Regents' examinations of New York State.

7. A study is being conducted (at the Iowa State University under the direction of President Jessup) to determine the effect of previous study of Latin upon the mastery of modern foreign languages in college.

8. Analysis of all the Latin tests that have been thus far published is being made by Lester E. Singer, Logansport High School, Logansport, Ind.

9. A study of the extent to which supervised study is employed in teaching Latin and of the methods used is being made by Elizabeth Smelser, Richmond, Indiana.

10. A study is being made of the results secured for Latin itself and for growth in English vocabulary by methods used in the teaching of Latin by the direct method as employed in the schools of Springfield, Mo. (This study is under the direction of Dr. Shelton J. Phelps and Mr. Charles E. Little of Peabody College for Teachers, assisted by Professor Norman Freudenberger of the State Teachers' College, Springfield, Mo.)

11. A study is being made at the George Peabody College for Teachers for the purpose of developing methods of testing comprehension by lessening translation (co-called), and to devise a test for improving translation both as to comprehension of Latin and expression in English.

12. A study is being conducted (under the direction of Dr. Charles H. Judd of the University of Chicago), for the purpose of analyzing the reading material in use during the year 1921-1922, in high schools of Minnesota, Iowa, Missouri, Nebraska, Kansas, North and South Dakota.

13. A similar study is being made (under the direction of Dr. Evan T. Sage, University of Pittsburg), covering the high schools of Ohio and Pennsylvania. It is hoped that similar studies will be conducted for each of the regions into which the country has been divided for the purpose of this investigation.

14. A study of the teaching of Latin in the 7th and 8th grades of the schools of Indiana is being carried on under the direction of Professor Lillian G. Berry and Dr. H. G. Childs of Indiana University.

15. A study is being made to measure the results both for power in Latin and in command over English secured by the "reading method" as exemplified in the high schools of Cleveland, Ohio.

VII. Analysis of Opinion

In addition to the scientific studies being carried on the committee has taken steps to elicit from representative teachers of secondary Latin their judgment in regard to certain fundamental principles involved in the organization of the present course and in regard to any proposed changes in contents or method. The judgment of the "Ultimate Consumers," namely, the pupils themselves, is also being sought as described under 4 below.

1. A general preliminary letter was sent to 250 teachers of Latin throughout the country for the purpose of securing their opinion as to certain fundamental questions relative to the organization of the Latin course. These replies have been analyzed and the results tabulated. This has furnished an excellent basis for a more intimate study of the problems involved.

2. Under the direction of Dr. W. W. Charters, Carnegie Institute of Technology, a plan was devised for securing "group interviews" from Latin teachers studying in the summer schools this past summer. The main purpose of these group interviews was to secure from experienced teachers their best judgment as to the most effective method for developing in their pupils various mental traits commonly ascribed to the study of Latin and the special training needed to enable them to apply the knowledge gained in Latin to other fields of knowledge. This plan will also be used in connection with meetings of classical associations this coming year.

3. In order to secure from a large number of qualified Latin teachers throughout the country their opinion as to the relative importance year by year of the various objectives listed in our preliminary report, a "score card" has been constructed and has already been filled out by several hundred teachers.

4. For the purpose of enabling pupils of the more mature type as found in fourth year Latin classes and in college freshman classes to express their opinion regarding matters in which their judgment might reasonably be given some weight, a "question blank" on content and method has been constructed and has been filled out by several thousand pupils of the type described.

5. On the basis of the experience gained through the various steps described above, a general questionnaire is now in process of construction which is intended to secure from teachers throughout the country a detailed expression of their opinions as to needed changes in our present Latin curriculum. Professor Frances E. Sabin will direct this important study.

6. Several psychologists (including Dr. Stephen A. Colvin of Brown University) have been invited to analyze our present course of study, particularly as expressed in our first year Latin books, to determine the extent to which the content and methods of presentation conform to recognized principles of the psychology of learning.

7. It is clear that in attempting to establish the principles upon which we should re-organize the secondary course in Latin, it is desirable that we bring to bear upon the problem general principles which the study of psychology in relation to education has at any rate tentatively established during the past ten years. Unfortunately, there are not among the teachers of Latin themselves very many who have had sufficient training in psychology, as applied to education, to attack this problem adequately. On the other hand, among the psychologists and educational psychologists with the possible exception of Inglis, there is no one who is familiar enough with the subject matter of Latin and its special problems to interpret their own principles in terms of definite suggestions as to content and method. In view of these two facts, it has seemed wise to ask a number of Latin teachers who are deeply interested in the investigation to assist in remedying this serious defect in our equipment. We are, therefore, inviting a number of Latin teachers to make a study of certain books that are commonly recognized as authorities in the field of secondary education for the purpose of eliciting those facts and those principles which in any way condition the organization of the Latin course or suggest constructive re-organizations in our present economy. We are also inviting them to follow this up with an analysis of some first year Latin book to determine to what extent it embodied these principles, and particularly to discover any especially valuable methods in presenting the material which distinguishes the book from others.

8. Among the aims commonly ascribed to the teaching of Latin are: the development of certain mental traits, habits, and ideals, among which are habits

of sustained attention, accuracy, orderly procedure, thoroughness; the cultivation of certain general attitudes such as neglect of discomfort, tendency to neglect distracting and irrelevant details, dissatisfaction with failure; the formation of correct habits of thinking and reasoning. The committee is undertaking to conduct a symposium on disciplinary aims in which leading psychologists will be asked to express their present views in answer to the following questions:

(1) Do you consider that these traits, if developed in the study of Latin, are subject to spread in fields outside of Latin?

(2) Would you make any additions to this list of traits given above? If so, what?

(3) To what extent and amount is this spread in your judgment automatic. i.e. occuring without conscious adaption of content and method to their aim?

(4) Can the extent and amount of this spread be increased by providing favorable conditions as to method?

(5) What method would in your judgment provide the conditions most favorable to the development and spread of any one or more of these mental traits? Is it essential that a particular trait be consciously generalized?

VIII. Statistical Studies

With the cooperation of the United States Bureau of Education an elaborate questionnaire has been prepared and sent out to all the secondary schools of the country, with a view to securing full information concerning the present facts about the study of the various foreign languages in the schools and colleges, and the academic and professional preparation of teachers in the field. Other pertinent facts are being secured through other agencies and by direct contact with teachers and administrative officers. The extent of these studies will be seen from the following outline of topics.

1. Enrollment of Latin and Greek pupils in the schools.
2. Distribution of these pupils by grades (7th to 12th).
3. Extent to which Latin and Greek are required in various courses of study.
4. The preparation of Latin and Greek teachers now in service.
5. For purposes of comparison, the same information (items 1-4) regarding the modern foreign languages.
6. Enrollment of Latin and Greek pupils in college in courses of college grade.
7. Enrollment of Latin and Greek pupils in colleges in courses of secondary grade.
8. Admission units required (also units accepted) in Latin and Greek for the various degrees.
9. For purposes of comparison the same information (items 6-8) regarding the modern foreign languages.
10. Number of colleges which offer courses in beginning Latin and in beginning Greek.
11. Number of colleges which offer teacher training courses in Latin and Greek.

Other studies of a statistical nature are planned for the coming year as follows:

1. A detailed study of the statistics of the College Entrance Examination Board for the years 1913-1922. This will include a study of the differences in the records made in other subjects by Latin and non-Latin (and Greek and non-Greek) pupils with an effort to determine, if possible, the influence of the factor of difference in initial ability.

2. A study of the correlation between College Board and Freshman year marks, with a view to determining the difference, if any, between Latin and non-Latin (and Greek and non-Greek) pupils.
3. Studies of state policies regarding (a) the study of Latin and Greek; (b) the preparation of Latin and Greek teachers by teacher training courses in state universities or normal schools.
4. A study of the tendencies in the courses of study in junior high schools, schools organized on the six-six plan, etc.

After the report, teachers were informed that copies of the tests could be secured from Dr. Mason D. Gray, East High School, Rochester, New York, or Professor W. L. Carr, Oberlin College, Oberlin, Ohio.

Miss Harriet L. Bouldin of Springfield High School read the following paper on Content of the High School Latin Course, in which she gave a summary of the opinions of Latin teachers in different parts of the state.

Content of the High School Latin Course

Harriet L. Bouldin

Over a year ago certain scientific tests were undertaken by the classical League having as their ultimate purpose the improvement of the teaching of Latin by improving the content and methods employed. This called for a constructive program involving the determination of the most important objectives and the means to be recommended as most effective in attaining them, as to (a) content of courses, (b) methods of teaching, (c) qualification and training of teachers. Such an investigation was welcomed by classical teachers. Their hearty cooperation was assured those who had charge of the investigation. Prof. Flickinger has just given us an interesting report of the progress of the investigation. That much has been done, is very evident.

At the present time there is a drive on for a concerted expression of opinion from secondary teachers regarding the content of the Latin course. In different states, in various ways, Latin teachers are requested to state their views with frankness. Your executive committee wished that an opportunity be given the Latin teachers of Illinois to give their opinions regarding the proper content of the Latin course. Miss Kent, the chairman of the executive committee asked me to prepare a suitable questionnaire to be sent to the Latin teachers of the state. She suggested that I should give attention to the analysis of the returns and incorporate the results in my paper on "The Content of The Latin Course." This met the approval of Mr. Carr.

Cicero once said to the Roman Senate: "Before I take up the question at issue, I shall say a few words concerning myself." Before I take up the matter of the questionnaire and the content of the Latin course, I would like to say a few things regarding the present condition of things in the High Schools.

Twenty-five years ago, the conception of the High School in secondary education was that of an educational luxury reserved for the few. It was an academic institution and might well be called a preparatory school for college. High School pupils at that time formed a relatively small and select group. For the most part, they looked forward to higher education and desired a kind of education represented by preparation for college. The classes were small in number and the curriculum was rather uniform. Due to the long history of the classics the methods of Latin instruction were well developed. They

were effective because they were developed to meet the needs and capacities of a superior type of pupil.

In recent years, however, there has come about a change of exceeding significance. The growth of the modern High School is one of the most remarkable phenomena connected with public education in the United States. In twenty-five years the number of pupils in secondary schools has increased from a half million to one and three-quarter millions. Of this number, nine-tenths are enrolled in the High Schools. Who are they? They are the children of all the people. No longer are they a select few. They come from homes representing all nationalities. Many are children of foreign born parents. Quite naturally, too, they are children of widely different capacities and needs. In one generation we have passed from the school of yesterday to the school of to-day. School buildings are inadequate to take care of this increasing host. Classes are over-crowded. Where formerly first and second year classes in Latin numbered twelve or fifteen, now they number 30, 35 or even more.

Furthermore this is a strenuous age. We have changed from the simple to the strenuous life. The world's work is not done as it once was, and the home does not stand for the training of children as it once did. In the majority of cases, conditions in the home are not conducive to real study. Moreover in the modern High School there are many distractions which militate against the formation of studious habits. There are athletics, dramatics, literary clubs, various and divers clubs, debates, social affairs, etc.

We must also remember this. Owing to the present organization of courses in the grades, little attention is given to formal English grammar. Many of those enrolled in beginning Latin come to us with a blissful ignorance of parts of speech in English, of case and conjugation. We can teach them these things, but it takes much time and patience.

Our grandfathers, our fathers, indeed many of us, completed beginning Latin in a year or even in less time. There was no difficulty in reading four books of Caesar, six orations of Cicero and six books of Virgil. The college requirements were easily met. At the present time, however, there is exceeding difficulty in meeting them. At the present time, despite the fact of the changes I have just mentioned, the college requirements, with some latitude in subject matter, are the same as they were twenty-five years ago. It is an impossible situation. I see no reason why it should be a case of—"As it was in the beginning, is now, and ever shall be." Latin in slow to change. Traditions and habits of the ages have impeded progress.

Prof. Johnston, formerly connected with the Dept. of Education in this University once made this statement, "We are plungers in education. We try out this plan and then try out that plan. In the United States, we are attempting things that would be impossible in the countries of Europe." However, it can not be said that the powers that control the content of the Latin course have taken any plunges. On the contrary, there has been in the past a decided tendency to look askance at changes. At the present time, though, it is extremely probable, that if Latin teachers so desire, the present content of the Latin course can be changed. Teachers are now requested to express their judgment as to the range and content which will most satisfactorily attain the legitimate objectives ascribed to Latin in the secondary schools. In these days of the organization of teachers, such as the present, changes for which we can give strong reasons, are almost sure to be adopted. So Mr. Carr assures me.

In the beginning, the first four books of Caesar, six orations of Cicero, the four Catilinarian orations, the Archias, and the Manilian Law were required. In 1910 the American Philological Association acting upon petitions from the Classical Association of New England, the Classical Association of the Atlantic States and the Classical Association of the Middle West and South, passed a resolution that a commission on college entrance requirements be appointed—

the commission to consist of fifteen members. This commission finally drew up a definition of college requirements which was accepted by colleges and universities. It is as follows:

I. Amount and Range of the Reading Required

1. The Latin reading required of candidates for admission to college, without regard to the prescription of particular authors and works, shall be not less in amount than Caesar, Gallic War, i-iv: Cicero, theorations against Catiline, for the Manilian Law, and for Archias; Vergil, Aeneid, i-vi.

2. The amount of reading specified above shall be selected by the schools from the following authors and works: Caesar (Gallic War and Cicil War) and Nepos (Lives); Cicero (orations, and De senectute) and Sallust (Catiline and Jugurthine War); Vergil (Bucolics, Georgics, and Aeneid), and Ovid (Metamorphoses, Fasti, and Tristia).

Eastern colleges and universities have entrance examinations. Certain requirements were made in regard to them.

II. Subjects and Scope of the Examinations

1. Translation at sight.—Candidates will be examined in translation at sight of both prose and verse. The vocabulary, constructions, and range of ideas of the passages set, will be suited to the preparation secured by the reading indicated above.

2. Prescribed reading.—Candidates will be examined also upon the following prescribed reading: Cicero, orations for the Manilian Law and for Archias, and Vergil, Aeneid, i, ii, and either iv or vi at the option of the candidate, with questions on subject-matter, literary and historical allusions, and prosody. Every paper in which passages from the prescribed reading are set for translation will contain also one or more passages for translation at sight; and candidates must deal satisfactorily with both these parts of the paper, or they will be not given credit for either part.

Stress was laid on sight translation. Reading the Latin aloud, and learning suitable passages was also emphasized.

While this course in reading was a flexible one, it should be noted that the amount of reading was not reduced.

That was twelve years ago. At the present time, this is not a proper content. It is not a content adapted to the capacities and needs of our pupils. The pedagogy of class instruction should recognize the fact that the varying capacities needs and interests of High School boys and girls of the present day require methods adapted to them. There can be no proper methods without a proper content.

It is interesting to note that at the preesnt time there are more secondary pupils engaged in the study of Latin than in all the modern languages or in the study of any other subject except English, Algebra and History. Half a million are studying Latin. This certainly means a great responsibility for the 10,000 and more teachers of Latin in the U. S.

All of us know that the philosophy of secondary education demands that educational opportunities, according to his needs, be provided for each citizen. We can see that we have now a wonderful opportunity to widen the sphere of classical influence, but we must acknowledge that instruction in Latin must adapt itself to the fundamental changes that have taken place in the character of the secondary school population. Instruction must adapt itself to the capacities and needs of the pupils concerned. Otherwise it can not be successful.

Prof. Inglis of the Department of Education, Harvard University, in an address given before the classical section of the N. E. A. in Boston, made some very significant statements. The philosophy of education he said, demands that educational opportunities are provided each citizen according to his needs. This means in technical language that effective learning of Latin requires an intellectual quotient of at least 105, five points above the average general intelligence. Inasmuch as nearly one-half of the High School pupils have an intelllectual quotient below 105, they are handicapped for the study of Latin as it is taught at present. A large number of them are excluded from a successful study of it. If a pupil fails in Latin it is due to two causes—(1) his unwillingness to make the necessary efforts or (2) in the instruction which is afforded. Now, the pupil is the primary factor in determining the character of the instruction, not some fixed and inflexible organization of content and method. In other words we should adapt the course to the pupils and not the pupils to the course. Unless this is done, a large number will face failure especially in the first and second year of Latin. Prof. Inglis also added that classical instruction at present is violating the law of original learning and the law of retention—namely—that sufficient exercise be provided to fix the principle or skill involved. In attempting to do Caesar in the second year, we must crowd the greater part of morphology, syntax and vocabulary into the first year. Yet the one outstanding principle in the psychology of learning is that sufficient exercise be provided to fix the principle or skill learned.

As Latin teachers we claim that Latin tends to develop certain skill, power, knowledge and ideals. Certainly, our pupils should acquire an understanding the life, customs, literature and thought of the Romans; together with an appreciation of their institutions and literature on modern civilization.

Our Latin classes should have a sense of growing interest, accompanied by a sense of increasing mastery, if the subject is of real and permanent value, and we could bring this about, if the pressure from the colleges was removed. If only we were free to induct the class into the subject, the boy or girl of average capacity and would have a fair chance of success. As it is, it is impossible to read four books of Caesar, or the equivalent in the second year. It is possible to read the required amount in the third year but at the sacrifice of much that is very important. It is possible to do the required amount in the fourth year but it is not desirable.

Distinction should be made between those schools that admit on certificate and those that require entrance examinations. Where certification is the regular practice, there is a general tendency to accept whatever the school accepts for graduation—to stress quality rather than quantity. Nevertheless this is very unsatisfactory. Many High School principals expect the Latin teachers to cover the amount required. Often patrons of the school question the work of the department. Teachers strive and strain to reach the goal and the pupils fall by the wayside—a veritable slaughter of the innocents.

An increasing number of our pupils are planning to enter eastern colleges that require an entrance examination. In our classes of varying ability, it is very difficult to get these pupils ready for it. There is too much ground to cover. It becomes necessary for such pupils to tutor—or to go to some preparatory school for a year. The parents object to such a situation.

I have given my own views about the content of the Latin course. I shall now give you the views of many other Latin teachers.

I prepared and sent out the following questionnaire to 225 teachers of Latin in Illinois:

> 1. If you were free to do so without limitations imposed by college entrance requirements, college entrance or scholarship examinations, prescribed local courses of study, text book adoptions, and

like considerations, what modifications, if any, would you make in the kind, amount, and order of the material read in your present Latin course?

I Year.
II Year.
III Year.
IV Year.

2. How much time should be given to Beginning Latin? At what time in the course should the first Latin author be taken up?

3. Have you substituted Ovid for a part of the third year or the fourth year Latin?

4. Have you used a substitute for any part of Caesar? If so, what?

5. At what point in the course would you begin the reading of
the second classical author? What author?
Of the third classical author? What author?
Of the fourth classical author? What author?
Of the fifth classical author? What author?

6. Before taking up the first classical author, would you read any considerable amount of "easy Latin?"
If so, at what point in the course would you begin this reading?
How long would you continue it? Should this material deal largely with Roman history? Roman daily life? Anecdotes or fables? Classical mythology? Modern themes?

7. Does your full Latin course consist of two, three, or four years?

Note—By the standard course is meant a beginner's book; Caesar's Gallic War i-iv.; Cicero's four Catilines, Archias, and the Manilian Law; Aeneid i-vi.

I received replies from 157 teachers. The results may be summarized in the form of these questions and answers:

1. Would you use Caesar at all in the second year?
Yes—*141.* No.—*8.* No opinion given—*8.*

2. If "yes," would you begin Caesar after one year?
Yes—*8* No—*141.* No opinion expressed—*8.*
Would you begin Caesar after one year and a half?
Yes—*139.* No—*8.* *8* not voting.
(Two would begin Caesar in the middle of the 3rd semester.)

3. Would you favor only a half year of Caesar preceded by a half year or more of easier reading?
Yes—*137.* No—*8.* No opinion given—*8.*
Four teachers favored giving the first part of the third year to Caesar, thus diminishing the amount of Cicero.
If "yes," would you select (a) Fabulae Faciles?—*7.*
(b) Viri Romae—*7.*
(c) Some reader now available. (Name it.) Sanford and Scott *9*; Nutting *4;* Nepos *3;* Gallup *1.*
(d) A new reader containing a wide variety of good Latin prose and verse for modern children?—*107.*

4. Should this easier reading—the "easy Latin," deal largely with Roman history?—*77.* Roman daily life?—*60.* Anecdotes and fables?—*48.* Classical mythology?—*75.* Modern themes—*8.*
Fifty-five registered an emphatic *no* against modern themes.

5. Would you use Cicero for a whole year?

Yes—*30.* No—*120.*

Several were undecided and thought it depended on the class.

If "no," would you use in its place for two or three months (a) Ovid?—*95,* (b) Sallust?—*6,* (c) Eclogues?—*5,* (d) Phormio and other plays?—*8,* (e) Livy?—*1.* Several were undecided.

Six favored beginning the Aeneid in the second half of the third year, continuing it in its fourth year, and taking Cicero the last semester of the fourth year.

6. Would you use the Eeneid for a full year?

Yes—*125.* No—*17.*

If "no," would you use in its place, for two or three months—(a) Ovid? instead of in the Cicero year?—*6,* (b) Eclogues?—*7,* (c) DeSenectute or De-Amicitia?—*2,* (d) Livy?—*2.*

7. Would you reduce the amount of reading included in the course in the

second year	Yes—*131.*	No— *8.*
the third year?	Yes—*124.*	No—*15.*
the fourth year?	Yes—*120.*	No—*16.*

From this summary it may be seen that the overwhelming majority favor the retention of Caesar in the Second year, but they favor a much lessened amount. They would like to leave some of the more difficult constructions in beginning Latin until the third semester and begin easy connected Latin early in the first year and continue the easy narrative through the third semester. They expressed their disapproval of the detached Latin sentences found in the usual beginner's book.

A considerable number favored a lessened amount of Cicero and Virgil. A large number were opposed to so many Catilinarian orations. Many preferred Ovid as a substitute. Several would put Virgil in the third year and Cicero in the fourth year. It seems to me that it would be hard to justify this change. Virgil is too precious to be put in the hands of tyros.

Caesar is evidently in favor. Personally I like to teach Caesar. I should indeed be sorry if my pupils did not have the opportunity to read about Titus Labienus and if they could not hear the tramp of the tenth legion. There is such a conciseness and concreteness to Caesar's narrative. It is a story of such magnificent generalship written by one of the greatest men in history. And furthermore the Gallic War does illustrate so beautifully the rules of syntax. No, it is not a case of our loving Caesar less.

I may say then that the teachers of Latin in Illinois are in favor of a change in the content of the Latin course. They believe that the amount that is required now should be reduced. They believe that the rush and haste that is now necessary, are not conducive to scholarship or to enjoyment of the subject. I am reminded of an article by Edward Yeomans that appeared in the Atlantic a couple of years ago. This teacher of history was talking to the parents of her pupils and she said this: "And he (your child) shall be like a tree, planted by the rivers of water, that bringeth forth his fruit in his season." A school should be more like a river of water, that flows, that sparkles, that lies out under the sun and the stars. You must not be in a hurry. You must allow this tree of yours, planted by this river, time and space—leisure to grow in, quiet to grow in, so that in *his* season, not in *your* season, he may bring forth his fruit. The entire philosophy of education is there from Rousseau to Dewey.

One thing more in conclusion. In changing the content of the present course in Latin, there is no cheapening of the wares we offer. We do not desire to establish a standard in quantity and quality so mediocre as to be easy of attainment by all; our pupils ought to do less but to do it well and enjoyingly.

Since the aims and objectives of the teaching of Latin have changed with the changing conditions in the High Schools, teachers of Latin ought to be given time and opportunity to accomplish them satisfactorily.

During the discussion which followed the report the opinion was repeatedly expressed that the reading of easy connected Latin should be begun early. Some thought, however, that the use of "made" Latin should be limited to the first year.

It was suggested that if much connected reading is done during the first year, some constructions must be left over for the third semester; even if this were not the case, the completion of four books of Caesar, requiring the translation of from twenty to twenty-five lines a day, would be too much for second year pupils, burdened as they are in the modern high school with numerous outside activities. It was said that Latin professors, who receive our best Latin pupils, do not realize, perhaps, how many have to be flunked in order that we may meet college entrance requirements.

Professors present expressed surprise that anyone should complain of the inflexibility of requirements in the Middle West. The colleges do not insist that every sentence of four books of Caesar should be read; they do not go behind the certification of the high school principal.

Attention was called to the fact that Latin students seldom read anything in its entirety, and that a sense of futility results. This difficulty is overcome by the British method of alternating passages of English translation with passages of untranslated Latin text. Thus much more reading can be done, the worst difficulties are eliminated, and the pupil is much more likely to understand the meaning of the whole classic.

Miss Sophronia Kent read Miss Grace Warner's paper, entitled "An Experiment in Private Initiative Work." Both Miss Kent and Miss Warner are from Moline High School.

An Experiment in Private Initiative Work

In an article of the October Classical Journal by Professor Inglis of Harvard entitled "The Conditions of Success in Teaching the Classics," he contrasts the character of the secondary school population of two or three decades ago with the attendance of the school of the present day.

Then the pupils of the secondary school were a comparatively select body of rather superior intelligence and with relatively common needs and interests. Today the enrollment of our public high schools, comprising nine-tenths of all secondary school pupils, is from widely varying kinds and conditions of homes and with widely varying aims and destinies.

In the school of yesterday the methods of classical instruction were developed to meet the needs and capacities of those who were preparing for college and the higher professions. In the school of today representing approximately all the diversified elements of the community, we have changed very little from the type of classical instruction as first adapted to a homogeneous and relatively superior group. For effective learning of the classical languages as at

present taught, it requires an intelligence somewhat above the average which means that at least one-third or probably nearer one-half of our high school pupils are handicapped for the study of those languages.

Though this condition of a changed student-body must be met in all branches of the curriculum it has especial significance for the subject of Latin, which has had to endure the slings and arrows of the modern utilitarian trend. That Latin has held its place in modern education in spite of these attacks, and in spite of the highly standardized and inelastic methods of instruction, should give us greater faith in its inherent vitality and place the teachers of Latin in the vanguard of search for methods to meet the new situation.

Modern applied psychology is leading us to consider more and more the capacity of the individual child and is attempting to fit our educational machinery to his needs. The average child for whom we used to direct our energies, we have come to realize is a non-existent entity. As one star differeth from another in glory, so each normal child from the most gifted to the weakest may have his contribution for society if we can but find the environment and training which will develop to its highest degree his individual talent. "The first task then of the classical teacher," to quote further from Professor Inglis, "is to study the capacities, interests and needs of each class and as far as possible of each pupil in each class."

This is the most difficult problem of teaching, the obligation to serve the differing elements which constitute the ordinary class, the bright, the ambitious, the conscientious, the plodding, the lame, and the lazy.

Too often the larger part of the teacher's time and effort is concentrated upon the labor of putting through the last three groups, while the superior pupil who will get by anyway is more or less neglected. He becomes, at times indifferent, at times idle and seldom if ever attains his full measure of ability in a mixed class where he can advance no faster than the pace set by the average capacity and industry of his class-mates. The conscientious pupil will do the task assigned, but unobtrusive little machine that he is, will too often fail to find inspiration for further effort, quite satisfied to have fulfilled the letter of the law. The weakling will limp along in the wake of the class getting little or nothing that is really his own, while the lazy boy is quite content to bluff through on the work of others.

Under our present school organization and circumscribed by limited funds it is not always possible, and not all of us are yet convinced that it is entirely desirable to segregate groups according to intelligence tests as some educators are beginning to advocate.

For the past three years in the Caesar, Cicero and Vergil classes of the Moline High School we have been trying to work out a solution for some of these difficulties, using what we may call the individual method of recitation whereby each member of the class accommodates the amount of translation and study to his individual energy and capacity. Our recitation hour, of forty-five minutes, has resolved itself into a laboratory period in which with no set lesson for the class beyond a daily vocabulary assignment, those who are prepared recite singly, or in groups as their preparation may happen to coincide, while others use the time for study.

At the beginning of the month there is posted on the class-room bulletin-board what we designate as the maximum, medium, and minimum amount of reading and the grades for the month, within clearly defined limits, which make due allowance for quality, are based primarily upon the amount covered by the individual. The maximum is calculated upon the teacher's estimate of what the brightest and most ambitious can probably cover, the minimum is gauged for the slowest workers.

Ten to fifteen minutes of the recitation hour are given to a vocabulary drill and the writing and correction of an English to Latin sentence, based upon

the weekly prose lesson. There remains time for about three recitations of ten to twelve minutes each by individuals or groups, who gather about the desk while the rest study. If more wish to recite than the teacher can handle in the period, a group may be handed over to one of the more advanced pupils. Was there ever a girl or boy who was not anxious to show others what he knew? There may be then three or four recitations going on simultaneously with as many or more groups studying.

The short time allotted for the individual recitation is no disadvantage for it presupposes a thorough preparation of the chapter or section offered, short of which the passage must be presented again. Contact with the smaller group makes it possible for the teacher to meet individual difficulties in form or syntax such as might be passed over entirely in a formal recitation, and to withhold credit from the pupil for the prepared section until the point at issue is mastered.

In posting the advance monthly assignments special items of form or syntax are emphasized for each chapter or section to be reported upon as part of the preparation along with the translation. In connection with the weekly prose lesson this affords opportunity for a judicious review of forms and systematic work in constructions, and though regarded as a secondary matter, is stressed as a vital necessity and indispensable means for accuracy in getting at the thought of the Latin.

The class-room contains a small working library which the study groups are encouraged to consult and which they use freely. Besides various editons of the text valuable for additional notes or collateral material, we have for Caesar, first and most helpful, Holmes' Conquest of Gaul, the introductory section of which is in daily use to clarify the narrative of Caesar and make it more interesting; also Caesar's Army by Judson, Holmes' Expedition to Britain, Dodge's Caesar and The Standard Bearer by Whitehead.

For Cicero we have the biographies by Trollope, and Collins, the latter a very readable short book, Shumway's Day in Ancient Rome, Plattner's Topography and Monuments of Ancient Rome. For Vergil there are the Standard Mythologies, Bulfinch, Gayley, Guerber and Smith's Shorter Clasical Dictionary; Virgil by Sellar, The Country of Horace and Virgil, Boissier; Virgil a Biography by Frank, Tolman's The Art of Translation and Helps to the Reading of Classical Latin, Poetry by Richardson. I list only the books in class-room use omitting others kept for reference in the school library.

Extra credit is given for the complete perusal of any of these books or the reading of any book on the classical period such as, Ben Hur, Quo Vadis, The Last Days of Pompeii, The Unwilling Vestal, A Friend of Caesar; to mention those most in demand. Through the cooperation of the English department our books have been placed upon the English reading lists and the possibility of reporting the same book for credit in both English and Latin makes a strong appeal.

As far as practicable the organization of the class is democratic. Items of class procedure are freely discussed and decided by vote of the majority. Members of the class in rotation look after part of the records, check up the amount of each other's translation, correct and grade the short week tests. The Latin department possesses a lantern and an opaque projector with a fair supply of illustrative matter, which afford material at stated intervals for formal programs given entirely under class management. Recently a committee from the Junior and Senior classes assumed entire charge of the bringing to Moline of Kleine's six-reel film, Julius Caesar which was presented with great success to a packed auditorium.

So far our system has worked with considerable satisfaction and profit to all concerned. In the conventional recitation period usually a minority carry on the lesson while the rest are more or less passive and there are always some, wholly unprepared, who retard the progress of the class.

Under this plan everyone must travel his own road. It heads off the shirkers who are willing to ride the class; it provides freedom to the gifted and ambitious to advance as fast and as far as their ability and energy will carry them. By placing each member upon his own responsibility and making him feel that the success or failure of his work rests entirely upon his own initiative, it stimulates interest, a healthy rivalry, and self-reliance. It releases the teacher from his position as task-master and permits him as helper and guide to become "one of the bunch" with time and opportunity to meet individual weaknesses and touch individual interests. The democratic organization of the class affords opportunity for self-expression and exercise of the creative impulse and helps to supply the motivating interest which must underlie all effective action.

A boy who was a troublesome member of the first year class, and whose work declined steadily in quality from the beginning to the end of the year, became a changed personality as soon as we began our individual work in the Caesar class. His mind worked so much more quickly than the minds of the others that he could not control himself from blurting out the answer to every question, and under restraint for the sake of others, busied himself in constant physical activity to work off his super-abundant vitality. With restraint removed and placed upon his own initiative, still eager, still over-flowing with energy, but quietly occupied, he set himself to forging ahead and every day presented a thoroughly mastered portion of text for recitation.

At the other end of the scale there was the painfully slow boy who had twice failed in Caesar and with complete discouragement both on his own part and that of the teacher was preparing to go through the motions for the third time. Under the old mehod he was able to prepare very imperfectly not more than two or three lines of the day's assignment, whose recitation by others was for the most part over his head. The lack of continuity in his work with resulting gaps in the narrative made the subject a hopeless confusion to say nothing of the senseless jargon about forms and syntax.

Freed from impossible assignments to work at his own pace John discovered that Caesar had a rather interesting story and found to his immense satisfaction that he could really work it out for himself with the teacher's help now adapted entirely to his individual needs; for he chose always to recite alone outside of class. Before the semester was over he was doing entirely satisfactory work in quality and enjoying it. And though he never quite attained the required amount in content, both principal and instructor agreed that he had earned a full year's credit.

Let me further add that this same boy made a very creditable record in the commercial department and when upon graduation a desirable position was open to some member of the class, John was recommended by the shorthand teacher as better qualified than his nearest competitor solely on the score of his Latin, which had given him a greater accuracy and more thorough grasp of the fundamentals of English spelling and diction.

Of course there have been drawbacks to this experiment in individual initiative, chief among which are the unwieldy size of classes and lack of time to meet all the needs which claim attention. We are still shaping our way, still adjusting and rejecting, for we do not regard our experiment as complete nor feel that we have entirely solved our problem. However, we do venture to believe from the results achieved that we are, at least, moving in the right direction.

In answer to a question about the additional burden on the teacher, it was said that the relief from clerical and correcting work was sufficient compensation.

Miss Effie Case of Lyons Township High School, La Grange, read the following answer to the question, "How Can We Improve the Teaching of Latin in Illinois?"

How Can We Improve the Teaching of Latin in Illinois?
Effie Case

The question, "How can we improve the teaching of Latin in Illinois?" leads to another question, "How can the teachers of Latin learn the methods which are being used by other teachers in the state, and therefore see in what points their own work could be improved or supplemented?"

There are in the state of Illinois five hundred different teachers giving instruction in Latin, each one of these presenting the subject in a little different way, some excelling in one particular, others in another. If some medium could be established which would pass on the experiences and ideas of all these teachers, making them common property, it would help to unify and broaden the work in Latin.

This need has been felt in other states, and a number of them have formed organizations which through committees are attempting to get in touch with every teacher in the state. Most of these organizations are under the supervision of the state university, which usually pays all the expenses, though in some states dues of fifty cents per teacher are collected for this purpose.

From the personal letters and the material received from the universities where these organizations have been established, the general plan apparently is to have the work in charge of a committee of from five to seven members. The feeling seems to be that larger committees are not advisable.

The work of the committees is along three different lines: that of publishing a monthly bulletin which is sent free to all teachers of Latin in the state; secondly, conducting a correspondence service bureau which answers letters from teachers who write for suggestions on material, methods or help on difficulties which they encounter. This branch of the service several universities say is the largest, hundreds of letters being received yearly. The third line of the work is that of maintaining a loan collection of books and slides which are sent to schools, the only charge being for transportation. The University of Texas also at the request of a teacher sends a visitor to inspect her work and to make suggestions.

The question we want to consider is, would we not be benefited by such an organization in Illinois, and if so, would it not be possible to establish one?

In case an organization is decided upon, if the universities do not feel that they can undertake the support of the work, why cannot this body of teachers appoint a committee, perhaps electing to that committee one member of the Latin department of each university and the other members teachers who would be willing to undertake the work?

By charging dues of fifty cents we would be able to publish a bulletin well worth while. Each number could be planned to give something of interest and value for those teaching each of the four years of Latin, and some items of general interest for the teachers' bulletin board together with suggestions for programs, notebooks, exhibits and information regarding equipment and where it may be obtained.

In the column devoted to first year work, different methods of teaching forms, grammatical constructions, English derivatives and conducting drills would help to avoid monotony, that obstacle to interest. Ways of correlating Latin with other subjects in the school and of connecting it with present day life would tend to show pupils and parents its value to them in the present;

that its benefits are reaped daily in every subject and on every hand. Occasionally mimeographed copies of easy reading material could be distributed. Also through mimeographed copies, standard examination questions and measuring tests could be circulated. These would give inexperienced teachers something by which to gauge their work, and to those who are experienced would give new points of view, guarding against their getting into ruts.

In the items for teachers of second year work, if those who are using a substitute for "Caesar" would write up their results, comparing them with the results they obtained with "Caesar" in the same school, it might help those in schools of similar type to decide whether the change would be wise for them.

For schools where "Caesar" is still the text read, methods of creating interest in the story and the customs, comparing the wars Caesar described with the world war; references telling where outside material may be found, would arouse enthusiasm and show how, without sacrificing accuracy, to make the year spent in reading Caesar's Gallic Wars of inestimable value as a basis for historical study and for showing pupils how to interpret all they read. With many, this will develop an interest in reading, one of the school's chief duties in preparing pupils to enjoy their leisure, both now and in their later life.

The same method pursued for the work in "Cicero" and Vergil", publishing in the bulletin interesting material on the subject matter and on the ways of presenting it so that not only the customs and their connection with modern life are made clear, but the importance of the orations and of the Aeneid as literary productions with their contributions to art, will make the Latin course what it is intended to be, a means of developing ability to think accurately and clearly, to give the power to interpret the thoughts of others and to express those thoughts in good English, and also to serve as a background of culture.

We might, at least later, be able to conduct a Latin Laboratory for loaning books, slides, moving picture films, charts, note books and models. The importance of this work in visualizing is being appreciated more and more, and rightly for, if, as psychologists tell us, the imagination plays a very important part in life, being the key to all progress, then we, as teachers of Latin, through pictures and models can help to develop this power to form mental pictures better perhaps than the teachers of any other subject, and by its use at the same time create more interest in the study of Latin.

Perhaps it is not so much new texts or new reading material we need as new methods of presenting the old. In modern life the emphasis is put on the visual. The interest in sightseeing, travel talks and moving pictures is evidence of this fact. By making use of this interest in things seen we can build up the power to draw mental pictures which will enrich the lives of the pupils.

We could another year arrange to have an exhibit at this convention, displaying the charts, notebooks, models and other outside material which we have used for this work in visualizing.

We all realize that we are benefited by meeting here once a year, but some schools do not close for the meeting, and some allow only one or two members of their faculties to attend. Therefore through a bulletin all the teachers of the state could keep in touch with the work and each by helping to contribute material, writing up methods which she has found successful would take new interest. Many would learn to plan their work more carefully, watching to see if they were obtaining the right results.

A paper, size nine inches by twelve, estimating seven hundred copies per issue, can be published for $22.75 per issue, making the cost for eight months $182. Perhaps better rates could be obtained, thus allowing more money for the cost of mailing, or the bulletin could be published every other month instead of monthly.

There are here on the desk a number of copies of the Latin Notes published by the University of Wisconsin, the Texas Leaflet, Iowa Bulletin and

some material sent out by the Universities of Indiana and Michigan which give an idea of the kind of paper we have in mind.

If an organization of this kind does not seem advisable, the plan outlined may suggest some other scheme which will help us to accomplish our aim, which is, to pass on our ideas in an effort to be of mutual help in creating more interest in Latin through methods which will help to make it a living force in the lives of the pupils.

The motion was made and carried that the executive committee of the classics section should consider Miss Case's suggestion and report if possible this year; if not, next year.

Miss Sophronia Kent presided at the afternoon session.

Miss Mary Johnston, Illinois Woman's College, opened the program with "A Day in the Life of Trimalchio's Cook".

One Day in the Life of Trimalchio's Cook
Mary Johnston

The censors now active in the State of New York have lately tried to suppress a translation of Petronius. The courts refused to sustain them, holding that the work is a classic, and that there are passages of doubtful morality, to say the last, in those two familiar classics, Shakespeare and the Bible. Perhaps the censor agrees with Owen Wister's Virginian, who states that Shakespeare writes just like men talk, and that probably a lot of him couldn't get printed nowadays, but at any rate he retorts that Petronius is safe—in Latin, but ought not to be let loose in English. Petronius' works, he states, are kept under lock and key in University Libraries for reference, and are further safe from contaminating the casual reader by being written in very difficult latin. And a certain scandalous dinner in our own time, he says, was modelled on Trimalchio's. Is that the sort of thing that we want to encourage and perpetuate? This was all surprising to one who had frequently seen Petronius' work on open shelves, all unguarded by lock and key, and who, having made the experiment personally, was of the opinion that it could be read by a Latin student of very ordinary ability. As to the modern dinner referred to, the allusion was not familiar, but the temptation to research in modern scandal was put aside for consideration of Trimalchio's dinner itself, and particularly of the person chiefly concerned in the preparation of that remarkable meal. And that we may surely discuss without danger to our morals.

This burlesque on the extravagance of the newly rich fairly riots in food. No such meal here as the two or three course dinner of the ordinary citizen occasionally referred to by Martial or Juvenal, nor was this like the elaborate affairs at which, those authors tell us, the host and perhaps a few favored guests devoured a succession of delicacies while the unfortunate client watched with watering mouth and ate such inferior food as came within his reach. Here there was food, much food, for all, in exhausting variety and quantity, served by such relays of singing servants as must have tested the butler's ability as a discliplinarian, and when they thronged the kitchen have driven the busy cook nearly to distraction.

Petronius gives us the dinner from the point of view of the guest. We may interest ourselves in the process of preparation, and imagine ourselves behind the scenes with the cook. Anyone who has ever cooked and served a dinner is the better fitted to appreciate the problems involved in planning, preparing for, cooking, and finally dishing up and garnishing any elaborate dinner,

not to speak of such a one as this. So first, we may give the cook credit for great executive ability. Of course, he must be a master of the technique of plain and fancy cooking. Then he must have inventive genius, as the master expected the dinner to be a succession of surprises. Trimalchio had named him Daedalus because of his ability to make any sort of food appear to be something else. No cheap article he! "Non potest esse pretiosior homo," says Trimalchio himself. Bought in the open market he would have cost a good round sum, but he was a bequest from his master's friend Pansa.

I wish we could have seen his kitchen! Let us hope that the stable did not open from it as sometimes happened. It must have been large to hold the materials and kitchenware necessary for such a meal, not to speak of the assistant cooks and scullions. The masonry range must have held many of the little charcoal fires for the numerous pots and pans and kettles, and there were facilities for roasting even whole pigs. The bread would come from a bakery, but he would need a brick oven, which was not to be found in every house. His pots and pans and kettles, knives and spoons and pastry molds—all these were in all sizes for the latest culinary wrinkles. His master had bought him knives of Noric steel at Rome, and liked to show them off at dinner, telling the guests they might try the edge on their own lips if they pleased. And everything he had would be beautiful in shape and detail, not like our plain black frying pans and ugly pots and pails.

On the day of the famous dinner he was at work long before daylight. He had to check over supplies, and to plan for the day's marketing, or for the things to be brought from the farms. It was Trimalchio's vanity to believe that everything he used came from his own estates. Still early in the day was an interview with Trimalchio on the subject of the dinner, for he must be satisfied with the bill-of-fare, and be ready to support it in the table-talk, leading up to the appearance of the dish, or marking its special point. This done, the assistant cooks must be set at their tasks, and the kitchen boys too, starting the dishes that required long or slow cooking or could be done in whole or in part during the morning. Some food of course required no cooking, and some could be prepared beforehand. The boar had been roasted the day before and shown at dinner, but not carved, and the plan for garnishing it on its second appearance was worked out. But there was a calf to be stewed whole, and a pig to be roasted, and to emphasize the surprise planned there four pigs must be ready, though only one would be killed or cooked. Still more pork was needed for the course at the end of the meal, when he would live up to his name of Daedalus, and send up a great tray of fowl and fish, all constructed of pork, to the pride and joy of his master and the disgust of the exhausted guests. The expert carvers, trained in the best schools, who were to carve boar, pig and calf, must be instructed as to the surprise involved in each course, and the costumes that would be appropriate. At least the light breakfast and the simple luncheon interfered little. Attention was concentrated on the dinner.

From time to time, though, he was distracted by Trimalchio's wife, Fortunata. Even during the dinner she was continually bustling about the dining-room, and as Trimalchio says, would never take a bite in her mouth until she had put away the silver and divided the scraps among the slaves. So we may be sure she was in the kitchen from early to late, the maddened cook as insolent as he dare be to his new-rich mistress, and wishing that he belonged to one of the old city families with a real lady at the head, one who would give her orders and be served from a respectful distance, and wouldn't have her fingers literally in every pie.

The morning and the first hours of the afternoon go by, and it is time for dinner. The peas aren't shelled, and the kitchen is busy. They are sent to the doorkeeper, who is shelling them into a silver dish when the guests arrive from the bath. Once the guests are in the dining-room and the serving begins, the assembling and carrying in of each course brings a moment of increasing

tenseness to the kitchen, followed by an instant of relief as the tray goes into the dining-room, and that much, at least, is out of the way.

First went on the gustatio, the relishes, valde lauta, a guest assures us accompanied as usual by mead, not wine. Petronius describes the donkey of Corinthian bronze, its panniers filled on one side with light olives, the other with dark. Little trouble to the cook in that, if only the nimble-fingered boys did not steal too many before it reached the table. Dormice were sprinkled with honey and poppy-seed. Daedalus was rather proud of the hot sausages on a silver grill, for he had put damsons and red pomegranates beneath to simulate the black and red coals. Eggs were traditionally a part of this course, as attested by the saying "ab ovo ad mala", and the cook sent in on the next tray a basket, with a wooden hen brooding over eggs in a nest of straw. Peacock eggs, Trimalchio explained to the guests, and he was only afraid that the hen had sat too long. Rather doubtfully the diners attacked them with spoons that, as one complained, weighed half a pound apiece, to find that Daedalus had sent in pastry shells, each containing a fat little figpecker in a dressing of devilled egg.

Then for the dinner proper the wine went on, and bread was sent around in a silver basket. The first course was disappointing at first sight in all but its novelty, for the great tray showed the twelve signs of the zodiac, each section set forth with a dish in punning reference to the sign, a bit of beef for the bull, for instance, and in the center turf and honeycomb for Mother Earth and the fruits thereof. All this was later to be expounded by Trimalchio, but the guests were greatly relieved when four servants lifted all that off and danced away with it, showing beneath fat fowls and sows' udders, the center piece being a hare decked with wings, Pegasus-fashion. Fish seemed to swim in the highly-seasoned sauce that flowed from the wineskins held by the four figures of Marsyas, one in each corner of the tray. The carver, punningly called Carpus, showed off the airs and graces of his trade to musical accompaniment.

Daedalus had planned the staging of his next surprise with special care, and the scene was set by sending in tapestries to drape the couches. These showed hunting scenes. Then while the guests waited in astonishment a shout went up outside, the hunting dogs were let it, and Daedalus sent in the great tray with the boar. A boar of the first magnitude, a guest calls him, wearing a liberty cap to show that he had been freed from serving the day before, and with little baskets of dates hanging from his tusks. Daedalus had laid little piglings of pastry about for souvenirs. The carver was not Carpus, but a great fellow in hunting garb. He slashed the boar's side with his hunting knife, and out flew thrushes, caught at once by fowlers. The four-and-twenty blackbirds baked in the pie were nothing to that.

There might certainly be a pause in the serving after such an effect, and the guest gossipped undisturbed while Daedalus prepared to send in his next effort. He called for the three live pigs, had halters put on them, and bells to tinkle in tune with their squeals. Then he sent them in and stationed himself within call, probably cursing the old man's taste for surprises and the necessity for leaving his kitchen at a critcal moment. Meanwhile Trimalchio asked the guests which one of the pigs, introduced by the nomenclator as two, three and six years old, they would have cooked at once. His cooks, he boasted, could stew a whole calf, and Daedalus was called in. The order to cook the oldest pig was given with a threat, and the cook followed his three pigs off to the kitchen. Almost at once he sent in the one that was ready, and waited for the second scene. He heard his master's voice roar out a summons, and went in, looking unhappy enough. "What's this? What's this?" Trimalchio was shouting. "This pig hasn't been drawn!" Daedalus sighed his apology. He had forgotten. "Forgotten?" yells Trimalchio, "You'd think he had forgotten the seasoning. Strip him!" And two tortores held him ready for punishment until the guests intervened and begged him off. "Oh well," said Trimalchio, "Do it here." So Daedalus got his tunic back and took his knife and with

trembling hand slashed at the pig. Out fell the sausages with which he had stuffed it, and the slaves applauded their master. The cook went back to the kitchen, rewarded with a drink and a silver crown, and a cup on a Corinthian tray. "And little enough!" he probably thought. "It's a wonder the old man did not finish me off to add to the effect! Some day he'll get excited and do it for a change, when he's tired of showing off his clemency!" And he hurried on with his work.

Trimalchio rattled on boasting of his plate. His private gazette was read, the entertainers went in, and Fortunata snatched a moment for a quiet drink, which was suddenly interrupted by a scene in the diningroom. Souvenirs with punning inscriptions were passed around. The Homeric entertainers went in. But the kitchen was still at work. Trimalchio announced the madness of Ajax, the Homeristae raised a shout, and in came Trimalchio's two-hundred-pound silver tray, containing the stewed calf with a helmet on its head. Dressed as Ajax, the carver fell upon it with drawn sword, and cut and served it for the astonished guests.

Then while the ceiling parted and more souvenirs were sent down from above, Daedalus found the moment for the entrance of his next course. Though it was not yet time for the dessert this was a tray of cakes, in the center a Priapus carrying all sorts of fruits. A common enough effect, but that the clever cook had filled each one with saffron, to drench the startled diners at the first touch.

But his resources were not yet exhausted. Now he dished up a bird course, for each satiated guest; not a mere thrush, but a whole fat fowl, nicely boned, and goose eggs in liberty caps.

The dessert was ordered in. It was ready. No ordinary tarts, but the finest pastry in the form of thrushes, stuffed with raisins and nuts. There were quinces, too, stuck with thorns to imitate hedgehogs. Still Daedalus had to earn his name, and the next tray showed a fat goose surrounded with fish and fowl of all sorts, all, as Trimalchio proudly announced, made out of pork.

The end was not yet, but the next course was well camouflaged. Two quarrelling slaves went in with water-jars, refused to accept the master's arbitration, and before the eyes of the horrified guests furiously struck each other's jars with clubs. Out gushed—not water, but oysters and scallops, caught on a platter and served to the guests. Then Daedalus went in in person to serve the last course, snails upon a silver grill. By the custom of the house he had to sing as he served, and it is reported that his voice was vile!

That done, by order of his tipsy master, Daedalus and the other servants crowded upon the dining couches with the unwilling guests. His mind at ease as to the success of his dinner he began to show what he might have done if he had not been a cook, imitating the tragic actor Ephesus. He was trying to bet with his master on the success of the Green at the next races when Trimalchio burst into a discussion of his will. He had, he said, manumitted all his slaves therein. Daedalus was listening eagerly to hear what his legacy might be, when Trimalchio rambled off into the order for his tombstone, dictating the inscription and becoming so touched that he burst into tears at the thought of it. Fortunata was wailing, and so were the guests, and the servants of course, Daedalus and the rest of them, when Trimalchio cheerfully proposed an adjournment to the bath. From that they passed to another dining-room, and a display of jewels and plate, not food this time. But Daedalus' work was not yet done. Trimalchio was proposing that they keep it up until morning when he was horror struck by the crowing of a cock. He poured out wine under the table to avert the evil omen, changed his ring to his right hand, and ordered the cock caught, killed and cooked. So Daedalus finished a good day's work with one final transformation scene, transforming the prophet of evil into an old fashioned chicken stew.

Miss Woodruff, Oak Park High School, read the paper of Mr. A. W. Smalley, Hyde Park High School, Chicago, entitled, "Derivative Teaching: What? How?"

Derivative Teaching. What? How?

A. W. Smalley

How shall we teach derivatives?

By growth, by confession, by enthusiasm.

The teacher whose knowledge of etymology is constantly growing will be so full of the subject that he can not help teaching it. He will not have to seek ways of teaching; these will press upon him from every side, suggested by his reading, his conversation, his experience, and by the questions and contributions of his pupils. To grow in accurate knowledge he must have access to one or more trustworthy books. The three dictionaries are in the main reliable. I refer to the New International, the New Standard and the Century. Yet they do not always agree, and it is unsafe to consult only one if the least doubt remains. To illustrate: The New International says the second element of *aeroplane* is from the Latin *planus,* and the word thus becomes a hybrid meaning *airplane.* The New Standard derives the second element from the Greek *planes,* a *wanderer,* the whole word meaning *air-wanderer.* This is doubtless the correct etymology, the confusion with the noun *plane* being almost inevitable especially as the words monoplane and biplane came into use. In another case the International is right and the Standard wrong. This is in the etymology of *contention.* The International derives the main element from *tendere,* the Standard from *tenere,* plainly an error. What is a final authority? For those who are fortunate enough to have access to the New English Oxford Dictionary the answer to this question is plain, except for words and meanings originating since the dates of issue of the various volumes. The Etymological Dictionary of Walter Skeat, latest edition, is thoroly trustworthy and easy of access. Weekley's Etymological Dictionary of Modern English, 1920, E. P. Dutton & Co. is a more recent and less accessible book intended for the educated man as distinguished from the scholar.

By confession. Questions are constantly arising in the classroom, questions which test the extent and accuracy of the teacher's knowledge. For his own soul's sake he must acknowledge his ignorance when he does not know, or say he is not sure when he really is not sure. Sometimes it is best to look up an etymology on the spot; sometimes it is better to promise a report for the following day. But even more for the sake of his pupils should a teacher be ready to confess ignorance. If the pupils see that the teacher is a student, tho further advanced, they will almost inevitably be attracted to the subject.

By enthusiasm. If a teacher is growing in knowledge, and using this knowledge in the classroom, he can not fail to be enthusiastic, and the class will catch his fire. They will respond with an interest which will carry over from the study of etymology to the other work of the Latin classroom. In this way time taken for derivative study is more than made good by the rapidity with which the rest of the work is done.

I have stressed these three points, elements of all good teaching as well as of derivative teaching, not because classroom methods and devices are not important, but because they are of secondary importance. A growing teacher cannot teach the same way in any two semesters. He will sometimes devise a new method, or adapt one from others. He will sometimes stumble upon a new way of teaching. But he will always make new use of an old method simply because he has grown and cannot do things twice in the same way.

Before leaving the question How? I shall suggest a few methods that have proved useful. There are the three ways of keeping a notebook suggested in the Latin syllabus for secondary schools published by the University of the State of New York, and illustrated on page 382 of D'Ooge's Elements of Latin. All three call for listing words under their Latin originals. In addition, one suggests defining the English derivatives; another, illustrating the derivatives by English sentences. Occasionally, or daily, I have assigned one Latin word to one pupil, with the request that before class he place on the board a list of all English derivatives he can find. This tests his knowledge of what constitutes a derivative, and his ability to find them. I have made general suggestions as to how to go about this search for derivatives. With the pupil's list on the board I have discussed with the class the history and meaning of some of the words, slurring the rarer and less important derivatives. The class was held responsible for the words explained. This method makes certain that each pupil understands what is being done, a thing we must not take for granted. One of my pupils, in giving derivatives from *vir*, reported a number of English words containing the syllable *man*, such as *manage*. Another reported a number of words having the meaning of a Latin word but coming from many different sources. At times I have myself placed on the board a list of English words derived from some known Latin word, to show the pupils the possibilities in the way of less obvious derivatives. Under *terra*, for example, I included such words as *terrier, inter, Terre Haute*, and *tureen*. Use may be made of trade-names, and advertisements, such as *terra-derma-lax* and *Ceresota*.

What derivatives shall we teach?

We can not teach the full nomenclatures of the other high school subjects, and in my opinion we should not go out of our way to cover all the ground possible. Except in the case of particular studies, such as algebra, the pursuit of which may be required of all pupils in a certain school, we can not be sure what nomenclatures our Latin pupils will need. If we decided—pardon the digression,—we should be in the same position as our "practical" friends, who argue that "practical" studies must form the solid framework of every high school student's work, when in nine cases out of ten neither they, nor the pupil, nor any one else, knows what will be *practical* for him.

Another difficulty is this. Suppose we try to teach the nomenclature of algebra. As a result of an investigation into the etymology of algebraic words, and the place their Latin originals first appear in our Latin text-books, I reached this conclusion: If we stick to the vocabulary of any ordinary first-year Latin book, we cannot teach effectively in 1 b more than about 21% of the algebraic words, nor more than about 56% in both 1 b and 1 a. Most of our effort comes too late to be of any real use to the pupil in his algebra class. It is evidently impossible to remedy this situation appreciably, with any text-book or with none.

In my opinion, the only coordination of much value, which we can develop, is with English. Even this can not be with any particular English book, or course, or work. It must be with English in general. Until we know what words occur most frequently in English, and until we have a Latin lexicon which will show all English derivatives from each Latin word, we can not know just what to teach, nor can a text-book be written with this object in view. Fortunately the investigations of the American Classical League have helped, and will help us. Thorndike's word-count has progressed far enough to tell us, in groups, the ten thousand most common words in the English language, and it will soon show us the next fifteen thousand words. See Thorndike's Teacher's Work Book, 1921, Teachers College, Columbia University. The work centering in Chicago, and based on the New English Oxford Dictionary, will give us Latin and Greek derivative lexicons, as well as, a numerical count, by sources, of the non-classical English words. Pending the results of these investigations,

we must content ourselves with teaching derivatives from words found in our first-year books, and from such words in the texts of the later years as may seem to each of us most worth while. We should pay attention to all prefixes from the outset, and later to a few suffixes. This last is direct coordination with work in most English courses.

In derivative teaching there is need of two cautions. First, we should be reasonably accurate without being pedantic. We should not say that *transpose* comes from *ponere*. Without going into a lengthy explanation, we may say that it comes from a Greek word which was used in low Latin as the equivalent of *ponere*. We should not say that *patriot* comes from the Latin, nor should we confuse the main elements in *deserve* and *reserve*. Above all we must beware of the false derivations common in popular publications, and even in text-books and teachers' journals. To illustrate: Two times, once in a text-book on sewing, I have seen *thimble* traced to *thumb* and *bell*. The ending is a suffix and has no connxion with bell. In the November, 1922, Journal of the National Education Association, page 358, a derivation is quoted from the Christian Science Monitor. *News* is traced to the NEWS of the weathervane. There is no basis in fact for this fanciful etymology.

Second, even with the youngest pupils we should teach the distinction between cognates and derivatives. Confusion at this point is subversive of all clear thinking. To say that *acre* is related to *ager* is not wise, unless we show that like two brothers they are both sprung from one parent, that *acre* is not a child of *ager* despite its modern spelling.

I am not one of those who think that derivative teaching is the primary and final justification for the study of Latin. In grading nineteen objectives of Latin teaching in the American Classical League's Score Card for Evaluating the Objectives in the Teaching of Latin, I placed three objectives at the top, a fourth in second place, and a knowledge of derivatives fifth in the scale. But I am enthusiastic about its value and interest. Let me quote the words of Mr. Skeat, to be found at the very end of the preface to the first edition of his dictionary. "The speech of man, is, in fact, influenced by physical laws, or in other words, by the working of divine power. It is therefore possible to pursue the study of language in a spirit of reverence similar to that in which we study what are called the works of nature; and by the aid of that spirit we may gladly perceive a new meaning in the sublime line of our poet Coleridge, that 'Earth, with her thousand voices, praises God'."

The afternoon session was concluded by "Some Inspirational Motifs in the Aeneid", by Professor Frank J. Miller, University of Chicago. Following is an abstract of this paper.

An Interpretation of the Aeneid as a National Epic

Professor Frank J. Miller

A study of the *Aeneid* in the last year of a high school course, must necessarily include a further study of the technique of the language, especially poetic forms, figures and constructions, also the metrical scheme of the poems. It should give attention to the life of Vergil, his relation to his times and to Augustus and his regime, the place of his works in the development of Latin literature; the *Aeneid*, its story, its dramatic setting and background and its relation to the poems of Homer, its influence on later and especially upon English literature, its historical, archaeological and mythological references et cetera.

These, however, can receive only superficial attention in the high school course. The bulk of the interest must center in the reading and interpretation

of the poem itself. This reading, necessarily slow and plodding, must in some way be unified and motivated in order to give the student a vital interest and lure him on into the poem.

The writer believes that if we discover Vergil's one purpose in writing the *Aeneid* and read the poem with this purpose in view, it will acquire new interest and significance to the students. This purpose, as a review of the whole *Aeneid* reveals, was to reawaken in the poet's own generation a feeling of patriotism by showing how the whole history of Rome was divinely inspired and shaped from the fall of Troy to the poet's own time; how worldwide and everlasting sway was promised to the Romans; and how in particular Augustus had been raised up to save the state from disruption and to guide her on to the fulfillment of her glorious destiny.

The writer drew a parallel between this presentation of Roman history and the Hebrew account of their own rise as the chosen people of God and the glorious promises which had been made to their race.

The study of the Aeneid in the light of this understanding of Vergil's purpose reveals the fact that the poet has written a great *national* epic with a great patriotic purpose. The national and patriotic aspect is seen in detail in the following statement of particulars:

1. He has treated of his country and his nation from the historical, archaeological, geographical and genealogical points of view, always with interest and admiration.

2. He has made his readers realize the dignity of their nation by reason of its great antiquity.

3. He has shown that the Roman state was divinely ordained for ages before its establishment and that divine Providence had been working continually to this end.

4. In an age of many and confused and often degrading religious beliefs and practices, he called the thoughts of his countrymen back to the more pure and simple old religion of the fathers.

5. He dwelt upon the divinely appointed mission of his country to rule the world, and the great principles of justice and mercy which should characterize that rule.

6. His glorification of Rome culminates in the glorification of the regime of Augustus Caesar, in whose reign he would have his readers see the fulfillment of the long series of promises given to the ancient heroes of their race.

5. COMMERCIAL SECTION

The Commercial Section of the 1922 Conference was opened by the Chairman, S. B. Irish, of Evanston, in Room 100 of the Commerce and Administration Building. The first of the morning's program was given over to a demonstration of the slide rule by W. W. Gorseline, Crane Junior College, Chicago. Mr. Gorseline placed a rule in the hands of every person present, and from the large rule at the front of the room, taught some simple problems in addition, multiplication, subtraction, discount, percentage and profits. He stressed the practical application of a knowledge of the slide rule in various forms of business because of the accuracy of the results and the quickness and flexibility of operation of the instrument.

The following paper was then presented by Miss Ada Andrews of Dundee:

Systematic Handling of School Funds with Student Co-operation

Ada M. Andrews

The project method of teaching is too well known, and too well established to need any elaboration in this paper. It is sufficient to say that it is the combination of two elements of education, theory and practice, in such a way that when the child has finished a project the theories involved in the problem have had a vital, practical application in his hands.

We have all found that vocational subjects need the practical work of the laboratory that the pupil may understand his work. This method is equally necessary in the study of the sciences and the student thru experiments proves or tests laws or theories. If this double method of instruction has been so successful in these branches of study, why, we questioned, could it not be applied with equal success to commercial subjects? We know that no man to-day pretends to know only the theory or the practice of his business. He wants and needs the combination of the two. The day of theory only, as well as the day of "the rule of thumb", has passed.

Realizing then the value of the application of practice to theory, and realizing also that we must have a systematic way of handling the moneys which were passing thru various hands, our school bank project was organized. The plans for operating the bank which were at first developed still remain essentially the same, tho they vary somewhat to meet varying conditions.

The bank is organized under the direction of the head of the commercial department. Her class in advanced bookkeeping is chosen to be the "banking class" of the school. The pupils are organized into committees, usually of four, tho the number is determined by the size of the class. Each committee serves for six weeks, and committees serve several times during the school year.

The business of the bank is two-fold, it handles the savings accounts of the grades and the checking accounts of the high school. A savings department for the high school should and will be established. The high school pupils need it as much as the younger children do. The only part of the banking business which we do not handle is the loan branch, and the reason for not making loans is that we do not wish to encourage the habit of borrowing among the depositors.

Our savings department has grown out of a campaign on the part of the teachers to teach thrift to the children of the grades and to encourage them to save as much of their money as they are able to. Two days a week, Tuesday and Friday, are "bank days"; then the teacher receives from the depositors amounts of one cent or more. Depositors must have a signature card which also has the parents' name and address. When these cards have been returned to the teacher the bank issues the depositor a pass book in which the teacher enters all receipts. Each teacher sends the money received together with the deposit slips to the principal who makes her principal's report and sends money, deposit slips and her report to the bank. The bank committee then enter these accounts on its ledger cards.

When a child has saved $1, he is given a transfer slip, or a refund voucher, and his account is transferred to one of the down town banks. In this way he has a real savings account started. If it is necessary to withdraw his funds when he has less than $1 deposited he is given a withdrawal card.

It is interesting on bank days to note the eagerness with which the depositors bring their pennies to the teacher. Sometimes between the grades there is a rivalry for the largest deposit which amounts to real competition.

In the high school the checking rather than the savings system has been developed. We should not, however, drop the savings plan when the child passes from the grades, for the high school is the place to clinch the good work done by the grade teachers.

Every high school principal knows that there are many funds to be handled. Their sources are many and their ultimate ends just as many. There are funds from classes, from athletic dues, tickets and games, from entertainments, from clubs, from joint school activities, from the sale of supplies, from book rental, and from many other sources "too numerous to mention". And how are these funds expended? They go to pay for class parties or picnics, for paying expense of the athletic association, for hiring talent, whether it be people or "movies", for the purchasing of supplies, for flowers, for financing the athletic association, or for other purposes. These funds formerly were in the hands of students, or a class adviser, or the principal. They were administered well, but not collectively, in a business way. Now all these funds pass through the bank. This is done according to a ruling of the Board of Education which requires that all money received or expended in the school shall be handled thru the bank. It is a wise ruling.

And who are the depositors? Every class in the school, every club, every organization, the principal, every one or every group handling money is a depositor. Every pupil pays his book rental to the bank. So the money handled in the bank is considerable. Last year they had nearly three hundred accounts and a business of about $15,000.

For the grades there were carried about 250 accounts amounting to several hundred dollars. The high school, with an enrollment of 205, had thirty accounts and did business amounting to about $12,000.

Each organization depositing money has its pass book and its check book. Deposit slips are filled out. The pass book and check book are kept balanced. All moneys received, in addition to being entered on the deposit slip and pass book, are entered on the journal and ledger. For expenditures the bank issues checks to every organization having an account. These checks are honored at our own bank by cash, or by checks on a down town bank. In this way every group is enabled to know and keep tally of its financial standing.

Our bank does not lead a wholly independent existence for it co-operates with the banks down town and checks issued by our bank are honored by them. There is an arrangement in our community whereby the banks alternate every two years in the handling of the taxes and school funds so as to prevent politics from entering into elections for the purpose of controling officials or money.

We have found at Dundee that this systematic handling of school money has been very satisfactory. It is accurate, quiet, quick and efficient. It eliminates all danger of unfortunate affairs in the handling of funds. It removes burdens from those responsible for money. Every group knows its financial status. It provides the best way to handle the savings accounts of the children. Our classes in advanced bookkeeping have had excellent practice in applying the theories that they have learned. It is a real project, new to each incoming class. It is, truly, systematic handling of school funds with student co-operation.

If a superintendent desires to have school money handled in a business way, the bank will serve his purpose admirably. If he is looking for a project could he find a more vital one?

After this the meeting was thrown open by the Chairman to a consideration of "Pupil Problems", and an interesting discussion followed. Points that were brought up in this connection were commercial clubs, the quality of student material now found in our com-

mercial classes as compared with that in other departments of the school. The consensus of opinion was that it was inferior, due, in part, to an erroneous conception on the part of vocational advisors as to the intellectual content of the courses. "Equipment Problems" were next discussed, and a wide range of experience was reported in the securing of equipment and the type of equipment in various schools.

At the business meeting which followed, it was moved and seconded that the officers for the current year be reappointed and serve for the next year. These are as follows:

Stacey B. Irish, Evanston, 1923, Chairman.
Mrs. Francis G. Sullivan, Crystal Lake, 1924.
Mr. A. A. Dorris, Taylorville, 1925.
Miss Marguerite Higgins, Joliet, 1923, Secretary.

The afternoon session was opened by Miss Mary Parker's presentation of her paper on "Practical Shorthand Teaching".

Practical Shorthand Teaching
Mary Parker

Shorthand teaching presents two problems to the teacher, the mastery of the theory and its application. My paper this afternoon will concern the latter.

After the student has begun his dictation career, each one becomes my personal stenographer. They are instructed in regard to the privacy of the letter and when the work is finished, I have a chance to see and explain to them the things wherein they are lacking.

We start them out also on rough draft work, stencil cutting, and plain copy work for the various departments of the school. The student realizes this is for actual use and puts forth his best effort and this gives the teacher an excellent opportunity to find the weaknesses of the students, the volume of work they can do, and if they are prepared in general to do outside work. You would be surprised how necessary this practical work is to the student's future success. As you might be interested in the amount of this kind of work we do, I asked our typewriting teacher, Miss Engle, to keep track of it for the last month, or October, and this is her report.

Science Department	*History Department*
15 stencils	17 stencils
1480 sheets of paper	1290 sheets of paper
Domestic Science Department	*English Department*
2 stencils	2 stencils
350 sheets of paper	900 sheets of paper
Mathematics Department	
1 stencil	Total stencils, 37.
500 sheets of paper	Paper, 4520 sheets.

The department also made enough copies of the plays given by the dramatic classes and organizations for each one in the play, typed 250 full page letters for the athletic association and also addressed the envelopes to go with these letters, wrote 700 postal cards and addressed 500 other cards.

A student for each hour of the day is put in the high school office to answer telephone, do filing, deliver messages and to do any correspondence work the assistant principal and dean of girls should desire and to study in their spare time. I also begin sending one, one day a week, up town. This transcript takes the place of the regular class transcript. It is brought to me for final criticism and then returned to the man. Some very interesting developments happen. To my question, "How did you get along?" they will say, "He went so fast. At first my fingers got stiff and I couldn't write", or "He was trying to talk to a man and dictate to me at the same time." Sometimes it takes them over night to make out a word in their notes. They feel very much chagrined if they have to return to their dictator for the word. Every one in the class is required to do this kind of work.

This kind of work is kept up to the middle of the year, when practical training in the business world is arranged for. Each student is sent out into an office where he works for two weeks from one until closing time, and all day Saturday. He is dictated letters, transcribes them, does filing, plain typewriting, and office work in general under the supervision of the main office girl or manager. I inquire how they are getting along, wherein they are weak and wherein strong. Once in the past three years, I have had to request a student to return for a second two weeks. As to what the students get out of this, I wrote to five of last year's graduates who are now employed and their answers are:

"I can't tell you how much good I derived from the dictation I got from Augustine & Oplinger. It surely was good experience. It was worth more to me than all the studying in books. It certainly was the best training possible.

It wasn't until I started to work that I realized how much good it did me."

Christine Zipse,
Stenographer—Decatur Pump Company.

"My trips during school, down to Mr. Augustine's and my two weeks at Stewart Dry Goods Company, for the purpose of taking dictation and learning something about an office, did me very much good.

When I first went to Mr. Augustine's for dictation, I was very nervous and scared for I was afraid that I did not have the ability to do stenographic work outside of school and my speed was not very good. But, after a few times there and my two weeks at Stewart's, I not only could do my work more accurately and more rapidly, both in taking dictation and transcribing, but I began to have more confidence in myself (which is very necessary in real work) and also the thought of taking dictation from a different or strange person did not hold such horrors for me.

There are also many little things that I learned then that I did not have an idea of until going outside, which it is almost impossible to get in school. As the saying is, 'Experience is the greatest teacher'."

Vera Curl,
Stenographer—Mueller Mfg. Co.

"The benefit I received from working for Mr. Augustine and The Review has proved very helpful. It made me a little more sure of myself. At first I was nervous and could not put my mind on the dictation but after going a few times I soon got over it.

It gave me practical experience, which is the one thing that cannot be found in books. It gave me an opportunity to see and work in an office like those that had been described in my text. More than anything else it proved to me whether or not I could take dictation well and transcribe it. There was no one who could tell me the words that I could not transcribe and I had to get them the first time.

It also gave me an opportunity to get acquainted with some of the business men of Decatur, and to know some of the business phrases that are used every day.

I am very glad that I had a chance to go out and take dictation because when I later got a position I knew what to expect."

Marguerite Cornick
Stenographer—Association of Commerce.

"Two weeks of actual business experience before leaving high school has been a great help to me in every way. It gave me confidence in myself and to a certain extent took away the fears and trembles which usually accompany the first position. Observation of real business life and methods strongly impressed upon my mind the essentials of good business."

Pearl Bell
Stenographer—Farmers State Bank.

"The experience which I got from working at the Stewart Dry Goods Co. and Augustine and Oplinger's has benefited me in many ways.

First it has taken away the fear of applying for a position. It has given me more confidence, so that now I can take dictation from anyone. I have learned to see things to do without having to be told.

It made me feel more capable of going into an office and taking on more of the responsibilities of the business world."

Inez Richards
Stenographer—Peoples Furniture Co.

Care has to be exercised in order to get this cooperation between the school and business places. To ask a business establishment to do that directly might give an open refusal. It is better effected thru students who are working at the various places and are especially strong in their work. Their employer will grant them unusual requests, though the manager of one concern that has a reputation of having in use one of the best organized systems in Illinois wondered why business colleges didn't do it as men would then know more what they were getting. It may also be accomplished through a student still in the shorthand teacher's class and whose father may be manager of some concern.

After the places are secured, the teacher must use discrimination in selecting the student for the place. A new place requires a student that is stronger in his work than one to whom students have previously been sent. Every place should have the best students and this will give the weaker ones time to develop.

For some of my advanced dictation material, I also use letters that I have collected from previous students who are now stenographers in the various industries of the town. This, of course, is done with the employers consent. These letters give the student an idea of what is expected of him in any place before he begins his duties. One student who, after leaving high school, and securing a position at the Herald, immediately got in touch with me for my letters from that place before going there.

The business man's attitude in regard to this plan and the competency of the high school graduate is better expressed by him.

"We wish to commend the action of the commercial department of our high school for their efficient manner of training students.

We have employed a number of the stenographic students and have found them to be very efficient in their work, and we would not have any preference in the selection of a business college student and one who has been trained in the high school.

Your method of sending the advanced students to different concerns for experimental work is one thing for which we wish to praise your teachers very highly. This training gives the student self-confidence, as well as the practical training in office work, such as filing, invoicing, billing, filling our purchase orders and numerous other office forms which the students will find necessary and of much value to them when they go out into the business life for their career.

We are always glad to co-operate at all times with the public schools and whenever your advanced students are prepared to be sent out for their office training we will be glad to take one or two and give them some training along the practical side of their work.

Assuring you of our hearty co-operation at all times, we are

Very truly yours,
REVIEW PRINTING & STATIONERY CO.
Signed E. V. Huston, General Manager."

"The plan adopted in the Decatur High School Commercial Department some years ago, whereby students are sent out into stores and offices in the city to take dictation, and to gain actual office experience has proven to be a wonderful success.

I have watched this plan from its incipiency and as you know, have had much to do with its activities. During the past four or five years I have had perhaps one hundred students from your Commercial Department visit my office for the purpose of taking dictation, the notes to be transcribed by them later, and the finished letters to be delivered to my office and I must tell you I have been astonished by these students.

The practical experience they have thus gained, supplemented by the splendid training secured in your Commercial Department has fitted them to take attractive positions in the business world immediately upon graduation. In many instances I have written letters of recommendation for these students and I do not know of a single instance in which the students which have come under my observation in the above manner have failed to make good in positions they have taken following their school experience.

I am indeed proud of their achievements and cannot speak too highly of the general plan which is so adequately fitting students for positions in professional life.

I shall be glad to continue to co-operate with you as in years gone by, and with best wishes for your success, I am

Very cordially yours,
R. C. Augustine."

"The general high school education is most desirable for the business life of either a girl or boy, and the students with whom I have had any connections have shown considerable ability in taking dictation and in neatness of typing.

Cordially,
Signed Harold Pogue,
Secretary—Association of Commerce."

"Your inquiry addressed to this office regarding high school students in our employ, we can answer very directly.

All girls from your department, including those up to a service of four years with us, are doing very good work. Without a single exception these girls have proved to do good work in the office.

Very truly yours,
H. Mueller Mfg. Co
Signed P. H. Rogers,
Personnel Supervisor."

Thus, through personal letters, rough draft work and stencil cutting for the various departments of the school and two weeks of actual business practice in offices supplemented by business letters of the various industries of the town for dictation material, the student leaves high school with a broader vision of business and better fitted for his chosen profession.

The next topic for discussion was ably presented by Miss Mary J. Favor, Bloomington.

Some Problems in the Teaching of Typewriting

Mary J. Favor

When I received a letter from Mr. Irish asking me to discuss problems in the teaching of typewriting, I was reminded at once of an occasion last year when several teachers told me of some of their problems. It was at the time of the District Contest which was held at Bloomington when the winning teams of each district met to determine the teams that were to compete at Normal for the typewriting and shorthand state honors. I was asked repeatedly, "How do you grade typewriting papers?" "Do you demand perfect copies?" "How do you keep your students from wasting paper?"

In order to discuss the problems that arise in the class room, I thought it would simplify matters if I gave a syllabus of my work in typewriting at Bloomington High School. The shorthand and typewriting is offered to juniors and seniors only and requires two years for completion. The typewriting covers two consecutive forty-five minute periods a day. We use the Rational Typewriting Manual, and Fritz-Eldridge for supplementary exercises in beginning work. I have arranged my course in nine budgets. The first term we complete the first eighteen lessons.

In teaching the location of the letters I use a large wall chart of the keyboard. Of course, the guide keys are taught first, stressing rhythm, stroke, position, and all the points of technique with these eight keys. Then I take up the different fingers as they are presented in the Manual. Some discussion has arisen whether or not it is best to start first with the strong fingers leaving the third and fourth fingers until a later period. After experimenting both ways, I am convinced this is the proper method. The machine is new, in fact, everything about the subject is new to a beginner and if the fundamental habits are well founded with the fingers that are strongest and naturally the most active, it will not be so difficult when it is time to take up the weaker fingers. I first locate the keys on the chart, then call the letters at random, the students locating them wholly by touch. I do not want them to become dependent on the chart. I take up about four new letters a day, after the first week, until the alphabet has been completed. This takes about three weeks. As soon as they have had all the letters of the alphabet, I give them exercises in solid matter. The earlier a beginning student is brought to feel the need of watching the book continuously, the less liable he is to become mechanical at too early a period. I plan to work with the class during the first hour at which time we practice rhythm drills, the alphabet, direct dictation of letters, words and short sentences which contain the letters taken up that day. The remainder of the two hour period is given to individual instruction.

As our beginning room is equipped with forty-five Remington typewriters, the work of teaching parts of the machine is somewhat simplified as I can give the work as class instruction on the different parts. I am very particular that my students know each part of the typewriter by its proper name and that they do not say "this little handle" or "that little knob". I plan to use the Victrola about twice a week during the first six weeks of the semester. My minimum

speed requirement for the semester is fifteen words per minute; however, most of my students win the twenty-five word Remington certificate before passing to the next term's work.

During the second semester we complete Parts II and III of the Manual, laying special stress on business correspondence and letter forms. By this time the students are transcribing two or three very short, simple business letters which have been dictated in the shorthand class. They also transcribe from the Graded Readings in Gregg Shorthand during the last month of the first semester. About thirty minutes is allowed for transcription. I try to give a ten-minute solid matter test in typewriting each day and have them post the results on a record sheet which they have made and keep in their files for comparison in progress. Once a week, on Wednesday, we have a ten minute test, the results of which are put on the board with ranking according to accuracy. This serves to keep the spirit of competition and interest at a high pitch. Frequently students not enrolled in the commercial department come in to see how their friends rank with the other members of the class. The minimum speed requirement for this semester's work is thirty words per minute although every student tries to win the Remington forty word award during the first year.

The first semester of the second year we finish the Rational Manual. The advanced students are kept busy with work for the other departments of the school and I always welcome work of this kind as it serves to "tie up" their training with actual business practice. The transcription work is very intensive, requiring about forty-five minutes of the ninety minute period. I follow the same plan of giving tests and posting the results as in the first year except that rankings are posted according to speed instead of accuracy the last month of the semester. Up to this point in a typewriting student's development I do not say very much about speed, but lay special stress on the importance of accuracy. The required speed is forty-five words per minute.

The last semester's work is comprised almost wholly of a course in office training, using the book and accompanying exercises published by the Gregg Publishing Company. The transcription is given in connection with this office training work. Legal forms, stencil cutting, the mimeograph and mimeoscope are also taught. Special speed practice is given incidental to the District and State contests. Sixty words per minute is required for graduation.

I have worked out a scale of grading which I have used for my speed and accuracy tests for the past two years and which I have found very effective. I have a speed average for each semester's work which I take as a basis. For instance, in my beginning class the required minimum speed is fifteen words per minute for which I give a passing grade of seventy. For every word above fifteen I add one point to the grade; for every word below, I deduct one point. This is a grade for speed only. For accuracy I allow seventy for ten errors and for each error less than ten I add three points, and each error more than ten I deduct two points. This would make a perfect paper worth one hundred per cent and a paper with more than ten errors failure. This three-point premium on accuracy stimulates the desire for more perfect work. Then I average the speed and accuracy grade for the test grade. This is fair for the student who writes very slowly but makes few errors, as well as for the speedy student who makes many. I do not average each test paper this way but take an average of the student's speed and accuracy for the entire month and grade accordingly.

My system of controlling the use of paper to eliminate waste and also to be sure of the students practicing the entire exercise is very simple. The Board of Education furnishes the paper for a charge of fifty cents a semester from each student which is very much cheaper than they would be able to buy it and use it as they wished. In the beginning classes we use half sheets for the first three budgets. I require ten copies of the first exercise of Lesson I, and

when I am ready for them to begin work on this lesson I hand them ten sheets of paper. When these ten sheets are filled I give them the required number of sheets for the following exercise and so on through the lessons. Each sheet is therefore a practice sheet on the entire exercise and not on just the first line or so or until a mistake is made and the paper destroyed. Without my having to say "perfect copy" it is the exception rather than the rule that I do not have several in the ten. I do not demand perfect copies. Too often correct method is sacrificed for the sake of a perfect copy and bad habits formed in this way are more detrimental to the progress of a student than the perfect copies are aids to a good grade.

I use graph paper for grading and checking these papers and rule it to correspond with the number of exercises in each lesson. When I receive the required number of copies, with errors checked by the students themselves, I keep the best copy or make note of the number of perfect copies. (Point emphasized by board illustration). Sometimes it is necessary to have a student make more than the required number but this is often inadvisable because I believe a person can work on the same exercise until it becomes monotonous and his work then is so mechanical that it hinders rather than helps him. At the end of the week or month I can look at my class roll, see immediately who is behind or ahead, and the individual record of each student. In grading beginning students, I try always to keep in mind their progress, or their possibilities of progress, rather than the number of perfect copies handed in. I find, however, that by continually working upon correct method mainly coordination between mind and fingers—that perfect work will invariably result. However, there should come a time when perfect work is required. The ultimate goal, of course, is perfect work and as soon as correct method is assured, I require a certain number of perfect copies of each exercise.

Erasing is not tolerated. During the last semester I teach the proper method of erasing and allow it only on outside work. When I have explained the harm resulting from the erasing habit and that it is considered the same as cheating on an examination in any other subject, I rarely have a case. The two or three cases I have had I have sent to the office where the principal threatens expulsion from school upon the second offense. We have never had to resort to those drastic measures, however.

Striking over is not allowed either. A strike-over on a transcript gives it zero without further consideration and budget papers must be made over if strike-overs occur.

We have tried to keep our shorthand and typewriting departments closely allied by checking errors in both subjects in each department. We do not allow credit in one subject unless the credit is made in the other, nor do we allow them to progress from one semester's work to the other unless both subjects are passed. If a student is exceptionally good in one subject and poor in the other, which is very rarely the case, and passes the semester's work in one and fails in the other, he must wait until he catches up in the failing study. He is allowed to come into a class of the subject in which he passed about a month before the semester closes and review so he will be ready to go on with the class. For the past two years we have not had a beginning class in either shorthand or typewriting in the spring and we have found it a benefit for those who have failed, because by the next September they have forgotten all the bad habits they cultivated and start over again with a new determination to win this time. When a failing student in typewriting starts over again with the class immediately after his unfortunate seemster's work, it is practically impossible for him to overcome his bad habits and start anew. I think most of you will agree with me that it is much easier to teach a student typewriting who has never had the subject than one who has had it and failed. If a few month's rest intervenes between the failure and the repetition, I have always had better results.

The hardest problem I have to face in advanced typing is to keep my people constantly striving for a higher point. It seems that the point between forty and fifty is the hardest to surmount and many times they get discouraged. Their low rate of speed is usually caused by the errors they make in striving to write faster than they are intelligently able to do, and I find that if I can just hold them down to a rhythmic rate of speed until the habit of errors is overcome, they will soon increase in net speed. I have found the Victrola very helpful in this work, also writing with them myself and counting or striking the letters on a stencil backing sheet so that the stroke may be heard clearly over the room. I do not advocate word, sentence or paragraph practice very often especially among a group of inaccurate typists. Anything that is in the least mechanical will not help them. Errors are caused by lack of mental or muscular control and mechanical writing will not aid them. Very slow writing on new material, analysing each error and striving for perfect rhythmic coordination between mind and fingers is the only solution for inaccuracy.

I have used Mr. Rupert P. SoRelle's book on "Methods of Teaching Typewriting" to great advantage. "Seven Speed Secrets of Expert Typing" by Smith and Wiese, has given me many pointers on how to get my students over the plateau stage. This book also contains many helpful suggestions regarding rhythm, finger gymnastics and drills.

The subject of typewriting was further discussed by Miss Grace Clow of Joliet, as follows:

Introduction to Discussion on "Some Problems in the Teaching of Typewriting"

Grace Clow

A paper so carefully planned and so forcibly presented as the one to which we have just listened leaves little room for question and discussion. I have been most interested in what Miss Favor has had to say, and I feel indebted to her for a number of helpful suggestions which I know I shall utilize in my own work in Shorthand and Typewriting in the Joliet Township High School.

Our course in Shortland and Typewriting has been undergoing fundamental changes during the last two or three years. From a time limit of one year it has been extended until it now covers the usual two year period. The work is open to Juniors and Seniors, and our present Senior class is the first to receive the benefit of the lengthened curriculum. So our fourth semester's work will be offered for the first time during the coming semester, and we are now making a careful outline of the content of the course.

Our period for typewriting is much shorter than the daily allotment of time given the subject at Bloomington. We are given one 50 minute period daily, and our students are kept so busy in other departments of our school that they find little time for supplementary practice. However, I am interested to note the many points of similarity between our course and the one just presented to us. We also use Rational Typewriting; we cover the first 18 lessons the first semester, Parts II and III the second, and the remainder of the book the third. During the fourth semester we plan to use Reigner's Advanced Dictation and Secretarial Training, published by the H. M. Rowe Publishing Company. Those of us who are teaching this work are especially attracted by this book and are looking forward with much enthusiasm to using it during the coming semester.

As we all know, a good start is of paramount importance in our work. A famous efficiency expert says in an article in the *Independent:* "Psychologists tell us that the greatest force in the world is habit. In all trades and professions men are most handicapped by a wrong start. The fatality of learning a thing wrong is seen wherever men work or play or strive to a given end." This same thought has already been given us by Miss Favor, but I feel that I want to make further mention of this vital truth. The right start! Correct position of every part of the body, sureness of touch and accuracy of stroke, the proper method of throwing the carriage, the eyes always on the copy, absolute concentration of thought—these are all points too well known to need discussion, but their elemental importance convinces me that I am justified in briefly touching upon them once more.

Miss Favor's explanation of her system of grading papers has interested me greatly, and I am impressed by the fact that for accuracy she grades much as we do. Except that our passing grade is 75 our method is the same. We take off 3 points for each error. Therefore a lesson containing more than 8 errors is not given a passing grade. Because of the fact that our course is now undergoing revision our standards for speed during the different semesters and our method of grading speed work and averaging that grade with the grade for accuracy has not yet been determined. We are working upon the question now, and shall have it decided when we complete the outline of our course. I think the plan just given us a very good one, and I feel that it has reached my colleagues and me at an opportune time and that from it we may obtain many valuable suggestions.

The problem of the control of the paper supply is ever present, and one for which there must be a solution. Our plan is effective, we think, and I trust it may be helpful to some of you. The paper used in our work is furnished to the students free of charge; therefore pupils may have no access to paper except as it is given to them by the teacher. For keeping a check on all paper we use a numbering machine. The first day of the semester we set the machine to print continuously the figure 1. Each student is given three sheets of paper, each of which has been stamped with this figure. He is asked, when he begins an exercise, always to write it thru to the end,—this rule is arbitrary. If he uses these three sheets during a single period, he shows them to the teacher and receives three more sheets with the same figure stamped twice on each sheet—this double stamping being necessary only when a pupil asks for two allotments of paper on the same day. The next day the numbering machine is advanced to 2, the next day to 3, and so on in regular order day by day, and all the paper given out on any one day is stamped with the number in use on that day. To secure three new sheets the pupils must always present the last three sheets he has received. Briefly, the last paper given out must always be presented before a new supply is received.

You may ask, "Does the pupil always present the *last* paper given him?" We believe he usually is honest about this matter. One semester I kept a record of every sheet of paper I distributed and referred to this record whenever a student presented his used sheets. It was a rare occurrence for him to try to deceive me about his needs. This system of regulating paper supplies is a very simple one, and we have found that it solves our problem very well. The students like the plan. By it they are made to realize that paper costs money, that they must be careful about the use and abuse of it, and that habits of thrift may add to their value in the eyes of their future employers. As we have about 200 pupils enrolled in our Typewriting classes, conservation of paper is a factor that has made necessary a carefully worked out plan.

Considerable discussion has arisen in our school as to whether pupils failing in Shorthand should also be refused promotion in Typewriting, and vice versa. So far the consensus of opinion seems to be that a boy or girl is entitled to every credit and every promotion that he earns, and we have never refused him

this reward for honest effort. We promote twice a year, and any student who fails in a subject has the opportunity to repeat the work the next semester. Many of our pupils find it necessary to go to work as soon as possible; their parents need their help and can not keep them in school an extra semester. Therefore we make no attempt to prevent them from immediate repetition of any work. Of course this irregularity in their advancement in Shorthand and Typewriting entails some difficulties in program making, but such inconveniences may be overcome, and we try to remember what we believe to be the good of the child, rather than the difficulties we see ahead of us in making his program. A certain amount of confusion results, too, in the matter of transcription, but a little thought takes care of this irregularity.

I am interested to note what vigorous treatment is given at Bloomington to the matter of erasing, and Miss Favor's solution has given me food for thought. We have not handled this question as severely as she suggests. A paper upon which I detect an erasure or a strike-over is returned to the pupil and he is told to rewrite. At the same time I place a check mark in my class book where the grade for that lesson will eventually be placed. When the lesson is returned to me with the fatal pages rewritten, I never give it more than 75, our passing grade, even tho the work be now perfect. This 75 is all the guilty pupil may hope for on that lesson, and the fact that his grade has suffered much more than it would have had he not erased is usually a punishment in itself. The problem of erasing is a serious and annoying one, and one for which there must be a solution in each school; otherwise the work in Typewriting suffers immeasurably.

Some one has said that rhythm, touch, and concentration are the stock in trade of a good typist. These three bring accuracy, and accuracy makes for speed. The proper method of conducing rhythm drill in beginning classes is something of a problem with me, and I am going to crave your patience long enough to set before you the questions that have presented themselves to me as far as this feature of the work is concerned. We all know that rhythm is necessary to accuracy and sureness of stroke. Those who have the victrola for use in this work have a wonderful assistant there. We so far have not used this valuable helper much because our next door neighbors are disturbed by the music and find it difficult to conduct their classes while the instrument is in operation. As a substitute I have found the use of castanets effective. They make a sharp, clear sound, and the students respond well to their beat. However, I find that, unless I keep them going constantly, the tendency of the class to increase its speed always appears. A rhythm that seems perfect at the start will increase in tempo until the speed is too fast for many of the pupils. I have wondered whether one cause for this failure to preserve an even tempo is the nature of the material used in the drill. If the same word is written in succession the speed increases just as soon as the pupils become thoroly familiar with it. Then they cease to concentrate and errors result.

Someone may say that an increase in speed is a good thing—pupils should increase their speed. Yes, let them learn to increase their speed, but let the tempo in each unit of drill be uniform throughout. Surely with the victrola in operation this tempo must be even, and while the speed of the record may be increased as the class progresses, at least the rate is uniform in the individual drill.

Doubtless many of us who have no victrola have encountered this problem. I have been attempting to solve it by using, instead of one word, four or five words of the same *letter* length. These we take from a supplementary exercise in our text, or write them on a piece of paper, so that the eye may constantly be busy and the mind always concentrated upon these words. Then we drill on these words, in regular order. The change from one word to another keeps the mind of the student occupied, his fingers do not become so familiar with

what is coming next that he does not have time to think, and because he has to think he is less likely to stumble and to increase his speed. I have been working upon this plan for some time, and feel that it is a good one, especially for those who have no victrola and must devise their own rhythm regulator.

Basing my opinion upon my conception of a good rhythm drill, I have of late been questioning the arrangement of some of the exercises in the earlier lessons in our text. Take, for instance, Lesson I; the word *jug* appears 18 times in the first line of Exercise 2, the word *fur* appears an equal number of times, and this plan is continued, not only in Lesson I, but in every lesson thru Lesson VI. Of course, at this stage of the work the pupil is unfamiliar with the keyboard, and you may feel that he needs this repetition. I contend that we present to him a combination of words that represents an unnatural condition, an arrangement of material that is not normal. Why practice a group of words that is not typical of the average typewritten material, especially since this repetition inevitably produces a lack of concentration, a rate of speed beyond the ability of the beginner, and consequent errors? If any one here has experienced this same difficulty, he may agree with me that our text books are open to improvement in this respect.

In closing, let me say that I have enjoyed Miss Favor's paper, that I have received many valuable suggestions from it, and that I have appreciated the opportunity of beginning the discussion of an article that can not fail to be of benefit to us all.

An animated open discussion followed, in which speed requirements in both typewriting and shorthand necessary for graduation in the several schools represented were considered. A general standard seemed to be 40 words in typewriting and 80 in shorthand for the first year, and 60 and 100 in typewriting and shorthand respectively for the second year.

The session closed with the following report from the University Senate read by H. T. Scovill, who had been selected as a committee of one to approach the University Senate on the problem of entrance requirement in commercial arithmetic:

> "Commercial Arithmetic. In order that commercial arithmetic be accepted for entrance credit, the University now requires that it be preceded by two years of high school mathematics. The College of Commerce and Business Administration recommends that this requirement be so changed that one year of high school mathematics preceding the commercial arithmetic be sufficient. It is thought that bookkeeping should precede or be studied concurrently with commercial arithmetic. As many high schools find it necessary or desirable to place both subjects in the second year of their curriculum, the present regulation makes it impossible to use commercial arithmetic for entrance purposes. After consultation with the high school visitor and with the College of Commerce and Business Administration, your Committee recommends that the requested change be made."

6. COUNTY SUPERINTENDENTS' AND VILLAGE PRINCIPALS' SECTION

The County Superintendent's and Village Principals' Section met in Room 218 University High School, at 9:00 A. M. November 24th.

In the morning County Superintendent Charles McIntosh made a very interesting report on Illinois Tests and Examinations. His report brought forth a rather extended discussion by the section.

County Superintendent J. W. Davis presented a most interesting paper on the Standards and Achievements of the Two and Three Year High Schools in Effingham county.

Mr. John Calvin Hanna, State Supervisor of High Schools, presented a very excellent paper on Standards and Achievements of the Two and Three Year High Schools. His report covered the schools of the state.

In the afternoon County Superintendent W. F. Boyes made a report on Teachers' Training and Certification. This excellent paper was filled with valuable suggestions.

County Superintendent B. C. Moore and Principal O. M. Swank read papers on Determining the Per Capita Cost. Both papers contained many valuable and interesting facts about the tuition of high schools. Both of the papers were discussed quite freely.

At the close of the meeting the following resolution was passed:

Whereas, there has been organized a Superintendents' Meeting under the direction of the School of Education; and,

Whereas, the interest of county superintendents in high schools as given in programs of other sections of this conference is discussed;

Be It Resolved, that we discontinue this section in order to avoid overlapping of interests.

The following papers were presented:

Standard and Achievement of the Two and Three Year High Schools

J. W. Davis

This paper will not be devoted to some theory but based on personal experience, particularly in Effingham; therefore most of it will be in the first person.

The importance of an education is being emphasized by business men as well as school men and that one is able to produce or earn according to educational ability. In all professions and positions the first question that is asked the applicant is his educational qualifications. The requirements for teachers, lawyers, dentists, doctors and all the rest are being raised until it is almost impos-

sible for people to enter unless they choose their profession early in life and plan in that direction. Many teachers with long experience are finding themselves greatly handicapped on account of requirements from accredited High School which never existed when they attended them.

The constitution guarantees to every child in the state a common school education—and the courts have repeatedly held that a common school education includes a high school education. This has been and is still impossible in a great many counties. There have been several tuition bills passed, providing for the payment of tuition to high schools. A few years ago one was passed compelling the district in which the pupil lived to pay the tuition. It provided no extra way of raising revenue and a great many districts could not raise enough to run their own schools properly.

According to this law, the better the schools and the more pupils they graduate the more it costs them, while on the other hand if a district maintained a poor school, with the fewest possible number of months, not following the prescribed course, therefore retarding or not graduating its pupils it would not cost the people anything.

About this time in 1912 we had only two schools in our county offering high school work. A movement was started in different parts of the county to consolidate four or five adjoining districts with a district containing a village school and thereby make it possible to offer higher work. By this movement several bitter fights were staged on election day, the outlying districts protesting against any such consolidation. Only once were we able to unite three small districts into a township high school. This ran for a few years and after the enactment of the non-high school district law it was discontinued.

The next move to secure higher work in these village schools, of which we had nine, was to follow the plan of alternation and have the principal teach the seventh and ninth years work one year and the eighth and the tenth the next year. In this way we were able to offer two years of high school work in these village schools. Of course all those people who voted against consolidation, as soon as their children completed their work in their home district, would send them in to gain a residence with their grandmother, uncle or cousin to take advantage of this higher work without paying taxes or tuition.

To offer this work and cooperate with the two larger schools of the county it was necessary to unify the course and standardize the work as much as possible. Therefore on the 12th day of August, 1913, a meeting was called at the county seat of all the superintendents and principals of the county, to outline and adopt a uniform program for one, two, three and four year high schools. Subjects that were required for each year were agreed upon, also the electives. Uniform text books were not adopted but several standard books were suggested. As a result of this meeting a circular was published giving the program, text books, etc. This circular explained the plan in detail, as what constituted the length of term, transferring of credits, etc.

In connection with this plan I worked out a program for the 7th and 8th grades in schools offering 7th and 9th and 8th and 10th grades. The plan was as follows: Counting eight of the elementary subjects as a basis, select two heavy and two light, as arithmetic and grammar and civics and Illinois history and instead of having 20 minutes recitation, double the assignment, also the recitation period, and by so doing cover the work offered for a month in two weeks. Then arrange the other four and complete them the last two weeks, thus reducing the number of recitations to four instead of eight. This plan has been carried out very successfully in ungraded schools.

The year 1914 the office of High School Supervisor was added to the office of the Superintendent of Public Instruction with John Calvin Hanna at its head. In August of that year another meeting of superintendents and principals was called to meet with Mr. Hanna. With what we had already done it was not hard for us to conform to his plans. We have reasons to believe that since this

plan was organized the high schools of the county have improved their course and teachers. The enrollment in high schools has increased from 74 to 660 pupils. This is the condition of the county today: two four year high schools accredited with the University of Illinois; eight three year high schools and one offering a two year course, all recognized by the State Department.

These nine village schools have a uniform course correlating with the two larger schools and all recognized by the office of Superintendent of Public Instruction. These nine schools are maintained by the non-high school tax of the county and their graduates are feeders for the two four year schools.

Every county is different and every one has its particular problems, but for my county the situation is very satisfactory for high school opportunities. In fact I think it better than a county divided into community high school districts.

I am not against the community idea if a large majority of the people of the districts are for it, but in most cases the city outvotes the country and this is the cause of a great deal of contention which is renewed at every spring election. The city people try to elect an officer who stands for better schools and the country one who is opposed to better schools on account of the cost.

If in the villages and cities where practically all the people favor better schools, they maintain two and three year schools in the villages supported by the non-high school district of the county, and then have at the county seat or one or two of the larger cities well equipped high schools supported by local boards, or one or two community high schools if conditions are favorable to furnish all the pupils of the county the fourth year that would be an ideal condition in my estimation.

I know some will say that the small schools can not compete with the larger schools and therefore can not do the work. It has been my experience that most of the honors given in the higher schools have been won by pupils from the small schools. And why not? These courses are prescribed and regulated, number in class limited per teacher, and if these small schools have efficient teachers and all the necessary equipment, with the best of environment, why shouldn't they do as good or better work?

We should remember that only a small per cent of the country children go to high school and these are generally the brightest and most ambitious. They go to work and to sacrifice and with a determination to win. On the other hand most all the city children are compelled to go, the street loafer, the undernourished, the cigarette fiend and all, with their many phases of social activities and late hours. This in brief is why a high grade of work can be done in the small schools. I am not saying that good work is not being done in the larger schools but I am contending for the small two and three year high schools. Their environment is more wholesome and for the entire enrollment they rank higher, mentally, morally and physically.

We need to make our schools more attractive or convenient or else our compulsory law more stringent and thus lower our illiteracy percentage and bring our great nation from rank eleven among the enlightened nations of the world with 6 per cent to that of the front ranke with .2 per cent.

Standards and Achievements of the Two Year and Three Year High Schools

John Calvin Hanna, State Supervisor of High Schools

The two year and three year high schools of the State are important in several respects:

1. In their relation to the four year high schools and to the colleges, universities and teachers' colleges.
2. In their personnel, that is in the people who compose them.

3. In their number as compared with the total number of high schools in the State.

4. In the proportion of the total high school enrollment of the State which is found in these schools.

Four points—*relation* to other schools, *personnel, number* and *enrollment.*

The first of these is the point which most attracts attention of school people. How should their pupils be treated when they come to us in our larger and fully organized schools seeking credit for the work done in their little school at home?

When it comes to the establishment and maintenance of standards for these little schools that first item must have just weight, and it is partly for that reason that, in setting the standards for the official recognition of two year and three year high schools, it was decided after careful consideration to make no distinction between the minimum standards to be set for these schools and their recognition on the one hand and on the other hand those set for the recognized four year high schools.

It is fair both to the pupils themselves and to the larger schools which are asked and expected to admit these pupils with credit for work done, to insist that the minimum requirements as to teachers' qualifications, course of study and equipment be as high as for the other schools. To say that a school may be recognized with a teacher who is only a high school graduate if the course is of two years only and the enrollment numbers but a dozen or twenty, while if it is a four year course and the enrollment is two hundred the teachers must have at least two years of education beyond that, is to weaken the rightfulness of the demand for credit, or to make it manifest that a better educational preparation has little or nothing to do with successful instruction in high schools.

To allow any sort of course to be offered and attempted in such smaller schools while enforcing strict regulations as to what subjects shall be offered and in what order and with what relation to each other, is to stultify the whole system of supervision and proportionately to lower the effectiveness of our public school system.

To require a minimum of high grade apparatus for science instruction in the larger school and little or none for what the smaller school attempts, to require in one case that history and English shall be taught with a well chosen library and with a complement of reliable maps and to let the other school get along without those helps is to fly in the face of all theories and constitutional provisions for an equal education.

The second point of importance regarding these schools is in their personnel. These boys and girls are just as good stuff as those in the "big" schools and they have a right to a "good common school" education. No discrimination is made in the law. Nor is such discrimination allowed. For this reason must the course be a good, sound one, and one that can be operated in the circumstances made necessary in a small high school: for this reason must the minimum equipment be the same for all schools so far as the subjects are taught and in proportion to the enrollment; for this reason must the certificating and educational qualifications of the teachers be the same as for teachers in four year high schools.

The third point of importance in these schools is their number. In the Illinois School Directory for 1921-22 the total number of high schools listed was distributed as follows: four year high schools, 643; three year high schools, 129; two year high schools, 148; total 920. That is the two year and three year high schools constituted in numbers 277 out of a total of 920 high schools, which is 30.1 per cent of the total number of high schools in the State. This is a proportion which can not be ignored and which, moreover, commands attention and consideration. Omitting all unrecognized high schools and comparing only the

recognized high schools, the figures are as follows: Out of a total of 860 recognized high schools, 224 are two year and three year high schools, which is 24.8 per cent—one fourth of all the recognized high schools.

The fourth point in which these schools are of importance is in their enrollment. Of course they are small, and of course as compared with the huge aggregations in most of the Chicago high schools and in some other large high schools, they seem almost insignificant in this respect. There are perhaps twenty or more high schools in the State each of which is at least 100 times as large as the average two year or three year high school.

But I imagine many persons will be surprised to learn that their total enrollment in 1921-22 was 6,892, which is about 4.3 per cent of the total high school enrollment. Nearly one in twenty of all the high school boys and girls in Illinois goes to this kind of a school.

I believe that it will be not without interest to note the shift in the number and enrollment in these schools and in their recognition status in the last five years. I have therefore compared the statistics in the Illinois School Directory for 1916-17 and those in the Directory for the year closing last June—five years apart.

These figures will show not merely ordinary fluctuations dependent on growth of population and in addition those dependent on the great awakening of interest in secondary and higher education which has been manifest in that period, but the comparison is, I believe, of particular interest because the law creating the non-high school districts of the State and the first community high school law went into effect at the close of that school year—the latter superseded two years later by the present community high school law.

An attempt is made to give some indication of the effect of these laws and to trace through the five year period the actual history of each of the three hundred and sixty seven two year and three year high schools listed in the directory of 1916-17. Here are the figures:

A. Enumeration in 1916-17

	Two year	Three year	Both
Unrecognized	184	26	210
Recognized	94	63	157
Total	278	89	367

B. Enumeration in 1921-22

	Two year	Three year	Both
Unrecognized	38	15	53
Recognized	110	114	224
Total	148	129	277

C. Increase and decrease

(1) In unrecognized two year and three year high schools:

Two year, decrease	144=78.8 per cent
Three year, decrease	11=42.3 per cent
Both, decrease	155=73.8 per cent

(2) In recognized two year and three year high schools:

two year, increase	16=17 per cent
Three year, increase	51=80.9 per cent
Both, increase	67=75.2 per cent

(3) In totals:

Two year, decrease	130=46.4 per cent
Three year, increase	40=44.9 per cent
Both, decrease	90=21.7 per cent

D. Changes in status in detail

(1) Number of schools superseded by township and community High Schools:

	Two year	Three year	Both
Unrecognized	37	7	44=20.9 per cent
Recognized	30	31	61=31.8 per cent
Total	67	38	105=28.6 per cent

(2) Number expanded to consolidated districts:

Unrecognized	7	0	7= 3.3 per cent
Recognized	4	1	5= 3.1 per cent
Total	11	1	12= 3.2 per cent

(3) Number developed to recognized two year high school (same district):

	Two year	Three year	Both
Unrecognized	36	4	40=19 per cent
Recognized	0	2	2= .1 per cent
Total	36	6	42=11.4 per cent

(4) Number developed to recognized three year high schools (same district):

	Two year	Three year	Both
Unrecognized	18	3	21=10 per cent
Recognized	21	0	21=13.3 per cent
Total	39	3	42=11.4 per cent

(5) Number developed to recognized four year high schools (same district):

	Two year	Three year	Both
Unrecognized	2	2	4= .5 per cent
Recognized	3	7	10= 6.4 per cent
Total	5	9	14= 3.8 per cent

(6) Number of schools closed entirely:

	Two year	Three year	Both
Unrecognized	56	4	60=28.5 per cent
Recognized	4	2	6= 3.7 per cent
Total	60	6	66=17.9 per cent

(7) Number which have remained *in statu quo*

	Two year	Three year	Both
Unrecognized	28	6	34=16.1 per cent
Recognized	30	19	49=31.2 per cent
Total	58	25	83=22.6 per cent

E. New two year and three year high schools formed in the past five years:

	Two year	Three year	Both
Unrecognized	11	0	11
Recognized	19	5	24
Total	30	5	35

There have been formed (and are in operation) since July 1, 1917, 294 community high schools and 6 township high schools.

Of these 101 community high schools and 4 township high schools have been developed from two year and three year high schools already in operation, leaving 193 community high schools and 2 township high schools made by superseding four year high schools already in operation or (in a few instances) developed where no high school was already maintained.

Perhaps about one third of the 294 community high schools now in operation (all developed since July 1, 1917) are thus seen to have been developed from

a nucleus of a two year or three year high school, and perhaps about three fifths of them from a four year nucleus and the remaining, one fifteenth, from no pre-existent high school nucleus.

The prophecy made by some persons in 1917, that the passage of the non-high school district law would put a check upon the establishment of community high schools with a four year course, has proven to be not well grounded.

These little local schools, conducted usually either by one or by two teachers, have been the nurseries of the larger projects and have contributed largely no doubt to the development of the sentiment which has poured forth hundreds of thousands of dollars for buildings and equipment and which is spending other hundreds of thousands for maintenance, so that the boys and girls in the rural regions of the State may, so far as possible, all have an opportunity for a good four year high school education.

Those which remain as recognized two year and three year high schools are serving a most useful purpose and in many cases a double purpose. They are providing at home two or three years of high school work for nearly seven thousand boys and girls, a large proportion of whom are so situated that they could not or would not take advantage of the non high school district law to attend some recognized four year high school at a distance, for even though their tutition is free, that in itself constitutes a small portion of the expense made necessary by attendance upon a four year high school from which their residence is somewhat remote.

For many others who go on elsewhere for completion of a four year course after finishing the curriculum in their little home school, the maintenance of this same little school at home saves their parents a considerable expense during those two or three years, and, what is sometimes of greater importance, they are kept at home under the parental care during the susceptible and formative years of their earliest teens.

It will be of interest to observe the average enrollment in the two year and three year high schools at the beginning and at the close of the five year period which we have been studying.

The total enrollment in the 278 two year high schools in 1916-17 was 3722 —an average enrollment of 13.6.

The total enrollment in the 148 two year high schools in 1921-22 was 2543 —an average enrollment of 17.1 (an increase of 25.7%).

The average enrollment in the 110 *recognized* two year high schools in 1921-22 was even larger, running to 19.6%.

The total enrollment in the 89 three year high schools in 1916-17 was 2347—an average enrollment of 26.3.

The total enrollment in the 127 three year high schools in 1921-22 was 4311—an average enrollment of 33.9 (an increase of 28.8%).

The enrollment in the 112 recognized three year high schools in 1921-22 ran up to 36.1.

A comparison may be made, perhaps with advantage, between the increase in enrollment in these high schools and that in all high schools.

The increase in enrollment in both two year and three year high schools in the five year period from 1917 to 1922 is 11.1%.

But the increase in the *total* high school enrollment in all high schools in the state in one year—1921-22—as compared with 1920-21—160,000 compared with 140,000—is 14.2%, a larger percentage of increase than the enrollment in the two year and three year schools in a period of five years.

This marked difference is due mainly to the development of the three year high school, and the great decrease in the number of two year high schools. For the increase in total enrollment in the three year high schools in five years was 83.6%, while the *decrease* in the total enrollment in the two year high schools in the same period was 42.4%.

The increase in *total* high school enrollment in the same period was 112,000 to 160,000—an increase of 30%.

A word or two about the course of study in the two year and three year high schools. There are very plain instructions and very practical suggestions on this subjects in circular 142, but many people are not easily reached by reading matter—either because they have never formed the habit of reading, or because they apparently think that these instructions and suggestions published and sent out from the State Superintendent's office were prepared just to give some man a chance to earn his salary—that they are arbitrary and of little importance.

But such a notion is far from the truth. They are prepared with one two-fold aim, and that is to furnish to the youth such instruction as is especially needed by them and adapted to their future plans, and such that it *can be well* done in their little school by one or two teachers, and on the other hand (and based on these two) such work as may fairly be offered for credit to a good neighboring four year high school.

If one were to make a list of all the subjects offered in the average large high school it might include the following groups:

A. Those which, from the nature of the subject, and the question of the pupil's maturity, or his lack of preparation, should not be attempted in any high school below the eleventh grade: English III, English IV, American history, advanced civics ½, economics ½, advanced algebra ½, solid geometry ½, physics, chemistry, commercial law ½, shorthand and typewriting, bookkeeping, Latin III, Latin IV. Bookkeeping, if studied for a year's work and for a mastery of the subject for practical purposes, is rarely called for in the case of younger pupils. Shorthand and typewriting are not likely to be called for except in city and suburban communities, and for practical usefulness should be taken in the last two years of attendance.

B. Those subjects which can be taught successfully in the second (or in some instances) in the first year of a larger and fully organized high school where there is an equipment of laboratory, special teaching force, etc. but which for lack of these or for other good reasons should not be attempted in a two year high school:

Zoology-Botany—lack of laboratory equipment and teaching force. Usually four year high schools hesitate to allow full credit for this subject taken in a two year high school.

Manual training—lack of shop room and proper equipment, as well as lack of teaching force equipped for this, and having time for it in addition to other duties. Moreover this is usually for boys only and necessitates an extra section to take care of the girls, as well as requiring double time. Hence, it does not pay to undertake it.

The same line of argument applies to the consideration of agriculture and home economics.

French and other modern languages—for these there is little real need in nearly all small communities,—not enough to justify the formation of classes.

C. This leaves the following list out of which a two year high school course has to be built up: English I, English II, algebra I, plane geometry, ancient history, modern history, elementary civics ½, commercial geography ½, commercial arithmetic ½ (but not accepted by colleges if taken below the eleventh grade), general science, physiology ½, physical geography ½, Latin I, Latin II. This makes a list of eleven unquestioned units, and remembering that *either* general science *or* the physiology-civics unit is accepted and required, but *not both*—the list is reduced to ten.

Now this practically means that there are two choices open for a two year high school namely, a course *with* Latin and a course *without* Latin.

These two courses shape themselves thus:

A. Course With Latin:

9th Grade	*10th Grade*
English I	English II
Algebra I	Plain Geometry
Latin I	Latin II
General Science (including physiology) or	Ancient History
Physiology ½	
Elementary Civics ½.	

The two classes in English, in mathematics and in Latin must both be taught separately every year.

If there is but one teacher, he must combine the pupils of both grades, one year in the science unit and in the alternate year in the history unit—holding the schedule thus down to seven classes daily.

B. Course Without Latin:

9th Grade	*10th Grade*
English I	English II
Algebra I	Plane Geometry
Ancient History	Modern History
General Science (including physiology) or	Physical Geography ½
Physiology ½	Commercial Geography ½
Elementary Civics ½	

The two classes in English, mathematics and history must both be taught separately every year.

If there is but one teacher, he must combine the pupils of both grades, one year in the science unit (or science-civics) and the alternate year in the geography unit.

There is no objection, in case some school which offers general science in the ninth grade wishes to offer as the fourth unit for the tenth grade, a unit composed of commercial geography ½ and elementary civics ½—to be alternated with the general science. This is the Champaign county plan and it works very well.

Now this does not offer a wide range in the making of a two year high school course, but it is about as wide a range as is possible to operate successfully with one teacher, and in my opinion it furnishes a group of eight units, which a neighboring recognized four year high school can very well afford to accept with credit.

When it comes to the election of four units to be put into the third year's list, there can be a little wider range. One of the four, of course, must be English III, and the other three, except under special conditions, may with advantage be chosen from the following list: Third year mathematics (which may be composed of algebra II with solid geometry, or algebra II with commercial arithmetic); such half units as commercial geography (if not taken before), commercial law, advanced civics and economics; zoology-botany (if there be a properly fitted laboratory), modern history (if not taken before), bookkeeping, physics (on same conditions as the biology unit), American history (if the European history has been completed in the first two years), Latin III (if Latin I and II have been taken), or even agriculture and home economics, if there are proper rooms, equipment and teaching force.

Certain minor modifications of these suggested courses are possible, but should not ordinarily be attempted without good reason and careful consideration.

The chief weakness in two year and three year high schools is in the teaching force. The same thing is true of four year high schools.

Even with serious deficiencies as to rooms and equipment and with almost any course of study, good work may be done if there is a gifted and devoted teacher. Such teachers are not easy to get.

We set up requirements as to certificates and as to educational preparation —good and reasonable standards which *ought* to be set up.

But there are two things never to be forgotten. First, there are always individual teachers and principals and boards of education who, whether they realize it or not, are trying to keep down even the moderate standards which are published. "Didn't know the requirements"—"didn't understand the requirement"—"thought if he had a certificate that was valid that was all that was necessary,"—"didn't know a certificate was necessary"—"is a teacher of many years experience"—"is a very deserving young woman"—"is a son (or daughter or friend) of the Honorable John J. so and so"—"we tried to get somebody from President this and Professor that"—"we are unable to pay any more"—all these and more are brought up as camouflage—and it is always the boys and girls who suffer.

Sometimes the order of procedure is followed thus: first, employ the teacher and sign the contract; second, see if he or she can get some kind of a certificate, without the labor of an examination; third, see if we can, with this teacher, hang on to our recognition and have the financial advantage accruing therefrom. Of course, this is an absolute reversal of the proper order, and occasionally one of the last two named steps is omitted entirely.

In the prevention of these abuses, the co-operation is needed of all of us,—principals and superintendents, county superintendents and state officials, and the more carefully and faithfully we work together to help boards of education and applying teachers to understand the real importance of these requirements, the better the results attainable.

A word or two about certificates. No person may lawfully be employed as a teacher unless he or she holds the proper kind of certificate.

For a principal of a recognized high school (including of course, those in charge of two year and three year high schools), the only kind of certificate allowed is a supervisory certificate, or a high school certificate, or in case of a teacher with successful experience, a first grade elementary certificate is endorsed by the county superintendent for high school work.

A second grade certificate and a "special" high school certificate will not serve for a principal.

A teacher in a recognized high school must hold either a supervisory certificate, or a high school certificate, or, in case of a teacher of successful experience, a first grade elementary certificate, if endorsed by the county superintendent, or in case of a teacher who is to teach only certain specified subjects, a special high school certificate covering those subjects. (The latter, for manifest reasons, is not a good sort of certificate for a two year or three year high school). A second grade certificate is not sufficient.

The educational requirement is by no means extreme or unnecessary, and it is lower than in several of the neighboring states. It merely insists that a tacher ought to be at least two years ahead, in education, of the school in which he is to teach, that is, that he must have completed a four year high school course and in addition at least two years beyond that in a higher institution of learning. There are enough teachers who are qualified to meet that requirement, and it should not be lowered or ignored.

But, and this is the second consideration to be kept in mind, even if all formal requirements as to certificate and education are met in full, that does not guarantee good teaching. I have seen, and I have no doubt you have seen rather shabby teaching done by teachers who could meet these requirements. It behooves us all to do everything in our power to uphold and to elevate the standard of the actual teaching in our schools.

One is tempted to urge, and insist and emphasize and illustrate and specify —in order to give weight to this injunction. But, it would hardly be in place, and the time is limited. One may have good text books and good sanitation and good equipment, and good education, and one may make reports and calculate grades and conduct tests, and yet neglect and fall down in the real work of teaching, which, after all, is the main thing and the only reason for all our machinery, all our organization, all our taxation, all our supervision, all our time and all our effort. Let us, in two year schools, and in three year schools, and in four year schools, look after the teaching.

The Training and Certification of High School Teachers
Walter F. Boyes, Galesburg

High school education in America is coming into its own. The present reaction against great expenditure for education in rural Illinois is but temporary. The movement will go forward until approximate equality of opportunity for high school education is brought to all boys and girls. This may take a longer or a shorter time; but if clearness of understanding and breadth of sympathy are necessary to its citizens in order that America may have its place of leadership among the nations of the world, there can be no question that at least the equivalent of our present high school training must be the portion of every person with mind enough to receive it.

The advance in the training of high school teachers and administrators has been as great as that in the number of high schools or of the attendance in them. From a time in which the teacher himself was allowed to judge of his fitness to teach a given a subject, we have passed to one in which there are very general standards of fitness set by those who administer schools rather than by those who teach them. It is fair to say that the notion of what constitutes fitness has advanced among the teachers themselves and there is now very little of the sort of presumption in these matters that was formerly very common. So rapidly is this standard advancing and so many more college graduates are taking up teaching that, from present indications, the time will soon be here when there will be college graduates to fill all the high school positions. Along with the increase in the number of degree people to teach in high schools is going an increase in technical requirements for such teaching. When such requirements were first made, a degree was enough. Then the accrediting bodies asked 6 hours of education, then 11, and the standards are now set for 15. These requirements are not advancing more rapidly than, in the judgment of those making them, they can be met in supplying teachers for a large number of good high schools—and the standards set for the best schools will be rapidly approached by all others. The anxiety of those who administer small high schools to have their schools accredited is most general, and sometimes almost pathetic.

This better understanding of what the qualifications of the high school teacher should be and the demand for high school education will make it possible within a comparatively short time to have, generally, high school teachers meeting such standards as the leaders in education set up. This requirement may easily advance to 30 hours, a full year of work; it is conceivable that the standards might be met at 60 hours. This would make high school teaching a profession so far as restricting its practice in the best schools is concerned.

I am saying that within a few years we shall have people with a high degree of technical training to teach in the high schools; and I have said so much to raise the question as to whether very much more of the training our teachers are now receiving will better adapt the high school for the service of our democracy. Are we certain that greatly increased training in the philosophy of education and in the technique of teaching and school administration will

give to the schools a character and quality which will meet the needs of our country?

John Adams was a man of clear mind and sound judgment, no one would, I think, accuse him of being a dreamer. Yet John Adams, at the beginning of our Revolution, it is said, clearly thought of himself as engaged in a great epoch-making event, far transcending any mere disruption of the British Empire or the establishment of an independent state. This is what he thought of the meaning of the Revolution:

"The form of government which you admire when its principles are pure is admirable; indeed, it is productive of everything which is great and excellent among men. But its principles are as easily destroyed as human nature is corrupted. Such a government is only to be supported by pure religion or austere morals. Public virtue cannot exist in a nation without private, and public virtue is the only foundation of republics. There must be a positive passion for the public good, the public interest, honor, power, and glory established in the minds of the people, or there can be no republican government, or any real liberty, and this public passion must be superior to all private passions. * * * And I sometimes tremble to think that, although we are engaged in the best cause that ever employed the human heart, yet the prospect of success is doubtful not for want of power or of wisdom, but of virtue."

It seems that Adams thought of himself and his associates away back there a century and a half ago as engaged in an experiment—"devoted to the regeneration of the human race". We hold the same idea. Whether our statesmen always act so, there is with us the consciousness that America is not for herself alone. And yet, with this faith in our high destiny, we see all around us conditions that indicate real danger to the stability of our institutions. Since the war was won by the forces that fought "to make the world safe for Democracy" we are on safer ground than we were before the war; but none of us believes that there are no further dangers to Democracy. The term Democracy is most loosely used. No one of us could at this minute give a definition that would be generally accepted by those in the room. We have more commonly used it in its original sense as a name for a form of government. We know that it is more than that. The form of government is merely an expression of a people who are themselves a democracy. When people are a democracy, what are the characteristics that make them such? How does a democratic people differ from one not democratic? What are the essentials, or what is the essential, of democracy among men? Montiesque said, "The law of democracy is that of equality". "Conceived in liberty and dedicated to the proposition that all men are created equal", is Lincoln's expression. Democracy in the United States means nothing if it does not mean equality. Professor Bailey of Cornell says, "A democracy is a spiritual power or product in a people."

From Plato down the idea has been that men are born equal. He, expressing the thought of his own time and that of centuries later, said, "All men are by nature equal, made, all, of the same earth by the same creator and however we deceive ourselves, as dear to God is the poor peasant as the mighty prince." Thomas Jefferson most probably expressed his own thought and certainly that of his time in saying, "We hold these truths to be self evident,—that all men are created equal". * * * I do not know to what extent Lincoln held the thought that equality of opportunity for which he struggled would reveal actual equality among men. I do not know to what extent the idea lies back in the minds of men generally now, but we all feel that if men are not equal there is an element of unfairness in creation. And we feel that each man who is a man at all, and is of necessity, for cause entirely beyond his control, unequal to another man, has a grievance. It is my belief that our system of public education has developed more through our innate sense of fairness to the individual than through any deep-lying desire for the welfare of the state.

And however well we know that not even any two men can be equal, our high schools have multiplied with the idea that education levels up, and with the hope that the better the training the more nearly equal we shall be.

But now comes along in education the development of recent years, disturbing this natural democratic tendency to believe that all men are created equal and that one man is as good as another. We constantly put intellect to the front. The action of Dartmouth and other colleges in accepting students from only the upper third of the classes of the secondary schools is but a pointed illustration of the common disregard of much of what is most valuable in human life and character. The constancy of the I. Q. being a fact, we face the alternative of stratifying society on an intellectual basis, or finding a new basis of classification. The pursuit of our course so far along the line of the supremacy of the intellect has been possible, I believe, only because we have never deliberately faced the fact that men are not equal. I do not say that we have not known; I do say that we have not faced the fact in its relation to the work of the schools. Preparation for teaching in high school or any school consists of knowledge of the subjects to be taught, and some knowledge of the psychology of learning. The power to know is to the front in all our work. The power to do has been coming in. But the power to feel and will are not definitely enough in the courses for either teachers or taught.

In the report of the Boston School Committee, 1823, occurs the following with reference to the English high school, established a year or two prior to that time:

"This school is situated in Derne Street. It has been instituted, at the public expense, with the express design of furnishing the young men of this city, who are not intended for a collegiate course of study and who have derived the usual advantages of the other publick schools, with the means of completing a good English education, to fit them for active life, or qualify them for eminence in private or public stations. Here are enjoyed, especially, the best instructions in the elements of Mathematicks and Natural Philosophy, with their application to the Sciences and Arts, in Grammar, Rhetorick, and Belles-Lettres, in Moral Philosophy and in History, Natural and Civil. This esablishment is furnished with a very valuable mathematical and philosophical apparatus for the purposes of experiment and illustration."

In the report of the school committee of Lowell, Mass., for the year 1839 is found the following:

"One of the strongest arguments in favor of placing it (the high school) at once on the most permanent and respectable basis, is that it may draw to its halls, the children of all classes; that it may be the place where rich and the poor may meet together; where the wall of partition which now seems raised between them, may be removed; where the kindlier feelings between the children of these classes may be begotten; where the indigent may be excited to emulate the cleanliness, decorum and mental improvement of those in better circumstances; and where the children of our wealthier citizens will have an opportunity of witnessing and sympathizing, more than they now do, in the wants and privations of their fellows of the same age; where both insensibly forget the distinction which difference of circumstances would otherwise have drawn between them and where all feel the conscious dignity of receiving their instruction as a right, to which as the children of citizens they are entitled and which cannot be denied them."

So far as the purpose of one committee is concerned, and the satisfaction of the other, these paragraphs might serve as a part of the report of one of our own high schools 100 years later. Neither paragraph expresses anything but what is entirely right and proper. The accomplishment of the purpose set forth by one committee would still be just cause for the pride and satisfaction expressed by the other. But from then until now the emphasis to each student has been upon the proposition that he bring the powers of his mind into operation to fit him for leadership. It is true, we talk now of service; but if I do

not misjudge, this service that we hold up as an aim is the service of the high to the low—the service the big man renders to those less than himself who need it. The contemplation of this prospective service is to the individual youth a sort of self glorification in preparation for his life. We set the youngster hard tasks and hold up to him for his encouragement the honor and the success that are to come to him from this performance. The life to be lived is his; the success is to be his. And later in life when the success has not come, the failure and, sometimes, the bitterness, is his. More than ever now we are classifying the children on the basis of their capacity to know. By this procedure the brilliancy of the brilliant is emphasized as is also the dullness of the dull.

In a symposium covering a half-day of the program of the National Department of Superintendence last year, some of the greatest educators in America spoke. In all that was said there was very little to indicate that scholarship and the culture resulting from academic training under the most favorable circumstances were not the only aim, except as Commissioner Tigert said that the mountain whites have some highly desirable characteristics that are not the product of school training. The stress is forever on the knowing with the idea that in some way knowledge is to inform and give bent to the life.

I know of course that the individual teacher often discriminates among the students and impresses wise and helpful lessons adapted both to the quick and the slow. But as we develop the training of our teachers this training becomes a more intensive and extensive study of the subjects to be taught—a larger knowledge of language or history or science, as the case may be, coupled with a somewhat more discriminating knowledge of the mind to be taught. The emphasis all the time is on the knowing and teaching to know. Our practice in this is based on the assumption, whether conscious or otherwise, that if one knows enough and knows it in relations enough, his knowledge will result in action of the right sort. If this last statement is even nearly correct we are on dangerous ground. We all know that there is little relation between knowledge and conduct.

The pessimistic utterances of some people who see only failure to us as a nation are not wholly groundless. Present conditions in the labor world, the deep-seated feeling of antagonism among farmers, the gathering of economic power into the hands of a few, and the influence of that few in the government do not make for quiet and stability. There is discontent and unrest everywhere except among the few at the top who can dictate terms to those below. From the abnormal conditions accompanying the war, we are unable to settle back into the routine of ordinary life. We do not have enough of culture, of intellectual resource, to make the simple life attractive. All ordinary folk find the values of life in their relations to others, and thus inequalities are made to stand out.

The only blame attaching to public education in this is that its aim is that of society in general. It emphasizes the individual to himself. The self stands out and the purposes of life are made to center in the accomplishment of one's own ambition and in the supplying of his own wants. The satisfactions of life are restricted; and in the absence of material things the currents of life turn back upon themselves and beget discontent.

Knowledge, ever more knowledge, is the cry, in the hope that knowledge will become wisdom and reveal itself in character. Is it not possible that good will toward others, the desire to serve them might be implanted early and be an incentive to the acquiring of knowledge? Is not capacity for good will just as native to children and youth as is the desire to know or the ambition for success?

"Freedom and equality" has been the cry of men since the French Revolution. The two words seem to be considered different names for the same thing. We have always boasted of our freedom and our equality. The freedom we have is proving a bit disappointing to a large part of our people and we school folks are ourselves disproving the idea of equality. But the two things

are just as fundamental to democracy as they have ever been thought to be—so fundamental, in fact, that without either there is no democracy. It will be a sad day for this world when real freedom in America is known to be impossible and when the word equality is taken from our vocabulary and its influence from our lives.

I believe the idea of a possible substantial equality among men is the true one in spite of our I. Q.'s, our saints and our sinners, our paupers and our millionaires. As good democrats, we feel intuitively that the man whom circumstances condemns to hard labor or to lowly place must yet in some way have the right to equality with any other man. We feel that no man, whatever his station, has any inherent right to be superior to any other man. You say that inequalities are inevitable for the reason that the man in low position can never have as fine or as high qualities as the man of high station with the time for the refinements of culture and the means for their satisfaction. But before we decide this let us be sure of our standards. I did not come to preach nor am I speaking necessarily as a Christian. Take the words of Plato quoted before, "And however we deceive ourselves, as dear to God is the poor peasant as the mighty prince." And idealistic and visionary as it may seem there must somewhere be a basis of equality among men.

Work must ever be one means of spiritual development to the worker. The iron man in industry may make us a race of machine builders and machine tenders. There must be little opportunity in their work for intellectual development to a majority of men; but if civilization is progressive and manhood is possible to the race, there must be opportunity for spiritual development in all kinds and classes of work. There must be a principle within which all alike can be men; there must be a measure according to which equality is possible. If there is such a principal, such a measure, it is the business of public education in a democracy to discover and apply it.

A minister in Galesburg on last Armistice Day said: "The autocracy of power has failed; the autocracy of wealth has failed; the autocracy of mind is failing, and the autocracy of love must now have its day." Every thoughtful person who heard him knew to a degree the truth of what he said. Some, probably many, scoffed at the tidea of its being practicable; but every one understood that unsympathetic selfishness is the basis of all our ills.

Is an era of good will ever to be possible? Can there ever be a time when men generally will feel responsible not only for their own well being but for that of others—of society in general? The survival of the fittest holds undoubtedly a long way in the scale of development. Under certain conditions the practice of ruthless selfishness makes for advancement. But isn't it possible that there comes a time when the fit are those with a great willingness to care for others as well as for themselves? How long will our training of the intellect be safe without this balance wheel—not of social responsibility merely, but of positive good will? If there is to be development of good will, positive and concrete in its expression, might it come to be a major part of our work in secular education? Is the old cry, "Peace on earth, good will to men" a slogan for Sabbath school only? Is this good will an element in Sunday behavior only? Or does it lie at the very foundation of life itself going farther than wealth, position or intellectual achievement to make the individual happy and the equal of any other man? As I said before, I am not preaching. Call this idea Christian or pagan—what you will—it seems to me nothing more than common sense applied to the situation in which we find ourselves as individuals and as a nation.

You say that it cannot be put into the schools, that it is not yet settled that we can even read the Bible in the schools. I am not at all certain that reading the Bible is necessary, though much good material for this kind of thing is found in the Bible. Our one experience in developing the material of the 18th amendment is a case in point. Most of us believe that temperance instruction in the schools had much to do with it, and our teaching dealt but

lightly with the subject at that. And it is safe to say here without argument that Germany has demonstrated that anything you want may be put into the schools and taken out in society. The Kaiser and his followers seized upon a power, or weakness, if you will, of the human mind and developed it to serve their ends. If children can be taught to sing a hymn of hate, can they not more readily, do you believe, be taught to sing one of love? We need to know that this is not necessarily religion,—it is simply the development of a principle lying deep in the nature of every child. We have too long acted as if religion were one thing and life another. If religion is of any service whatever it is because it meets the law of development in the life of man down where he lives every day.

The thing I am talking about is probably visionary; but it will be some day, a practical realty in the hands of teachers who understand that whatever training mankind needs is the proper work of the schools.

In those days training of the intellect will be no less valued than now; but more than now recognition will be given to the fact that good will toward men and devotion to duty beget insight into truth and into life's values. There will be more brotherhood and more "firmness in the right". And human charity will still maintain—

> "A man is all that he means to be:
> His heart may falter; his feet may fail,
> And yet the man is the same to me."

John Adams was right. He had part in a work greater than the establishment of a new state or the dismemberment of the British Empire. The republic which he had part in founding, if we are faithful, is the field where the race is to come into its own, where men will achieve a real freedom and where equality and brotherhood will prevail.

My reason for daring to go so far afield under the topic assigned me is that what I conceive to be the qualification of teachers is implied in what I have tried to say is a function of the schools. There must be broad training so that throughout the whole field of instruction first things may be placed first. There must be intensive and extensive training in the subject to be taught to prevent error and insure mastery of detail. There must be the breadth of professional knowledge that we are striving for now—knowledge of the history and the philosophy of education, knowledge of the principles of teaching and school management. And then there must be the technique of teaching without which all else fails. These things always.

But when the high school is performing more nearly its whole task and selection of its teachers is to be made from among people with prospect of large success, character, purpose, and personality must enter in much more largely than they do now. When the development of the right attitude toward life and the promotion of good will are accepted tasks of the school, with as definite a part of the program as has mathematics or history, who the teacher is will be a more definite part of his equipment than what he knows.

The ethics of the law or of medicine may be for the guidance of what the practitioner knows in the doing of what he does, knowledge and skill being the major part. But what the teacher knows must be for the information and guidance of his spirit in what he does, the will to serve sympathetically being the major part.

When we think of what ought to be, our sitting in judgment on a teacher through a professional credit sheet seems a joke. But the fact that such a sheet and such judgment are necessary makes it anything else than a joke. The disposition of the college student to "get by" is not greatly modified sometimes by his exchanging the position of student for that of teacher. The narrowing of his teaching to one subject and the measuring of his success by tests and grades are not always conducive to a large idea of what teaching means. Fortunate is the young teacher who falls in with a principal and older teachers who know that in purpose and in training a teacher must always advance.

Our people everywhere will come some day to know that they cannot afford poor teachers. Such a statement seems foolish now, probably. But faith in the outcome of things will permit no other view—and that day may be here decades earlier than we think. Then the work of teaching must come to have enough in it that is distinctive to make it a profession. Those who teach and the work of the schools must be shielded from the instrusion of those who have no purpose or will to teach more than temporarily.

(I cannot take your time here to say anything about the woman in this question of permanent service as teachers, further than to express the belief that the problem is not too difficult for solution.) But it seems to me that the separateness, the distinctiveness, that is to professionalize teaching may come in through changing somewhat the direction of public education. The school will undertake to produce men and women not so entirely through the training of the intelligence but more through the development of purpose and good will. When it does, the call will be to young people who think that they would like such work and that they have a degree of aptitude for it. The selecting will be largely done by the young people themselves, before the training begins; and the training schools, being able to get more nearly what they want, will do most of what remains. We are a long way from this yet. But if there are any weaknesses in our present system we better "think on these things".

In the near future it might be well to have advisory boards to deal with all certification upon credits. The membership of such a board might represent the institution in which the credits were made, the state department of education, and the county in which the certificate is to be issued. Its function would be to recommend the issuing of certificates and the withholding of them. Every recommendation should be made following investigation and a personal interview between the board and the candidate. One's opinion may be radically different when it must be expressed to those who know as much about the case as he does, from what it might be under other circumstances. And a high-school teacher's certificate should be as significant as admission to the bar.

The Certified Statement of Qualification used with our Institutional Credit Sheet has these words: "It is understood that this statement includes faculty recommendation of ability to teach". Not in the future but now that should mean just what it says. It is to be feared that many times this statement is signed rather perfunctorily. The colleges should in all cases recognize their duty to the schools and recommend only such persons as really have the approval of the faculty as prospective teachers.

I have no recommendations as to legislation. Our laws seem adequate for our time—there is no advantage in having them beyond that. I believe the desire of the people for good schools will, under the leadership of those who know what good schools are, when economic conditions have changed a bit, create legislation as needed to give all our boys and girls training that will fit them for life and happiness among their fellows.

Determining the Per Capita Cost

O. M. Swank

The question of what shall be included in the claim for tuition for pupils from the non-high school districts has been a troublesome one. This is probably due to the fact that the amounts involved have been too small to justify a suit and action in court. It is said that in interpreting any statute the last guess goes to the Supreme Court. However that may be, it is true that we may never be sure just what the interpretation is until the court passes on it.

The law under which the claim for tuition is levied is a part of Section 96 of our school laws. This states that "the tuition shall in no case exceed the per capita cost of maintaining the high school attended, excluding therefrom inter-

est paid on bonded indebtedness, which shall be computed by dividing the total cost of conducting and maintaining the said high school by the average number of pupils enrolled including tuition pupils".

We have just heard of the variety of ways in which this has been interpreted. Usually a sort of working agreement has been adopted between the county superintendent and the local school officers. Some of these agreements undoubtedly hold the tuition below the "cost of conducting and maintaing the high school." Others are more liberal. The following is an example of the first:

"It is proper to include in the bill for tuition any of the following items:

1. All salaries paid to the principal and teacher.
2. All expenses for janitor service providing the entire building is used by the high school. If any portion of it is occupied by grade schools then the expense is prorated.
3. The same kind of division should be made in regard to the cost of fuel.
4. Supplies purchased for the high school are to be included provided they are supplies which are used up. Apparatus, books, and maps that have any permanency cannot be included.
5. None of the repair expenses or building expenses or plumbing or heating plant can be included.

I submit to you that this does not cover the cost of maintaing and conducting the school.

An example of the more liberal interpretation allows in addition to what is given here a charge for use and depreciation of equipment. The first runs from two to five percent and the second from five to ten per cent.

The blank on which the high school expense account and tuition claims is certified to by the clerk or secretary of the board calls for the following items:

1. School and business officers.
2. Teaching.
3. Textbooks, stationery, supplies, etc.
4. Janitor, engineers, etc.
5. Fuel, water, light, and power.
6. Repairs and replacements.
7. Insurance.

8 and 9. Other items.

10. Total expenses for the year including interest on bonded indebtedness.

This follows very closely the current expense column of the statement of high school expenditures which the clerk of the board is required to file with the county superintendent in July of each year.

The items which the non-high school boards scrutinize most carefully probably come under the head of first, maintenance of plant, repairs on plant and replacement of equipment; second such auxiliary agencies as purchases of books and apparatus. The annual appropriation for new library books, the appropriation for laboratory equipment which in most schools, I believe amounts to about the same year after year, the purchase of dictionaries, maps, and other equipment which is made annually to about the same fixed sum in the aggregate but which are consumed during the year, are all items which are subject to dispute. Occasionally there is a question about a building or ground out-lay—whether it is a repair or an alteration which is not a repair.

Some light may be thrown on these questions by a decision of the Supreme Court in December 1918. The case, which is No. 12, 342 Illinois Reports, volume 286, page 384, is an appeal from a decision rendered in the County Court of Kane County. The Chicago and Northwestern Railway had refused to pay a

non-high school district tax and attacked the constitutionality of section 93, 94 and 96 of the school law, i. e. the provision for the non-high school district.

The question of what is included in estimating the cost of maintaining a high school was not attacked specifically but was made a significant part of the case. I will quote the section of the decision in which this question is discussed.

"Section 96 of the act provided that such tuition shall not exceed the per capita cost of maintaining the high school attended, excluding therefrom interest paid on bonded indebtedness and appellant contends that this provision discriminates against the pupils and tax-payers in the high school district in that, while the non high school district pays only such per capita cost, the tax payer of the high school district must pay, in addition thereto the expense necessary to erect and equip such buildings and pay the interest on bonds therefore, and that the pupils of the high school district pays more for his education than the pupil of the non high school district, and that the act therefore violates the constitutional provision requiring uniformity. Such objection does not obtain here. Each pupil residing in the high school district received his education on the same terms as all other pupils who reside in such high school district. Each pupil in the non high school district is to receive his education on the same terms as all pupils in such non high school district, that is on paying the per capita cost of maintenance of the high school attended. The fact that the per capita cost of the pupil residing in the high school district may be more than the per capita cost required of the non high school district pupil does not violate the rule regarding uniformity in the application of a law to all similarly situated. The pupil within the high school district and the pupil without such district are not similarly situated. The per capita cost of maintenance is not the test of the uniformity in the application of laws regarding to the maintenance of free schools. To so hold would be to say that the per capita cost of maintenance must be the same in all school districts. Such would produce an absurd result."

The court recognizes that there will be some expense borne by the high school district which can not be included in the non-high school tuition but favors "as even a distribution of costs as it is possible to obtain," and in the following states what is to be included.

"That a resonable tuition shall be paid for non-high school pupils has been recognized in this State. The right of the legislature to fix such reasonable tuition and the means of its payment, subject to the requirement that the privileges there under be extended equally to all children similarly situated, is likewise well established. The act providing the tuition in this case meets these requirments. Section 96 of the act provides that the cost of maintenance, upon which the computation of the tuition is based shall be "the total cost of maintaining such high school," less interest paid on bonded indebtedness. It is evident that the legislature intended by this provision to secure as even a distribution of cost as it is possible to obtain; *that the total cost of maintaining such high school should include all expenses incurred by the high school district in maintaining such high school, the rental of any buildings therefore not owned by the high school district and a reasonable charge for the use and depreciation of buildings owned by the high school district;* and the interest paid on bonded indebtedness should be excluded from such computation to avoid duplication, which would necessarily result if interest on bonded indebtedness as well as said use of depreciation was to be charged. The computation of the tuition on a basis excluding interest on bonded indebtedness does not therefore create an inequality."

To repeat, "the total cost of maintaining such high schools should include the rental on any buildings not owned by the high school district, a reasonable charge for the use and depreciation of its own buildings and all expenses incurred by the high school district in maintaining the high school district except that the interest on bonded indebtedness should be excluded to avoid duplication which would result if interest and use and depreciation were both charged.

What conclusion can be drawn from this decision which so far as I am able to find is the only one which bears on the subject under discussion this afternoon? Let me point out the significant statements. First, I quote "The fact that this act in effect requires the taxpayers of the high school district to pay the cost of buildings and interest on bonded indebtedness. Second, in referring to the expression "the total cost of maintaining such high schools" it is evident that the legislature intended by this provision to secure as even a distribution of cost as it is possible to obtain. Third, that the total cost of maintaining such high school should include all expenses incurred by the school district in maintaining the school, the rental of any building not owned by the district and a reasonable charge for the use and depreciation of building owned by the district and excluding interest on bonded indebtedness."

From this I think it will be a legitimate conclusion that the court would allow all expenses which are listed under the following heads:

1. General control (which includes)
   a. School boards and business officers.
   b. Compulsory attendance.
2. Instruction (which includes)
   a. Principals, supervisors, and teachers.
   b. Textbooks, stationery, supplies, etc.
   c. Interest on teacher orders.
3. Operating school plant.
   a. Janitor, engineers, etc.
   b. Fuel, water, light, power, janitor supplies, etc.
4. Maintenance of plant.
   a. Repairs.
   b. Replacement of equipment.
   c. Insurance.
5. Such auxiliary agencies as:
   a. Libraries.
   b. Expenditures for promotion of health.
   c. Rent.
   d. Interest on anticipatory warrants.

This includes the total list of what is called current expenses, but the test of whether the thing for which the expense is made is consumed or used up in the current year does not seem to be applicable here.

Then we must include "a reasonable charge for the use and depreciation of buildings," if owned by the school district. This will not be as large as a rental charge for we have included repairs in our current expenses.

This leaves only the question of expenditures for equipment which are not made for replacement. If we pro rate the expenses for replacement of equipment it would not seem fair to charge, as is often done, a depreciation on equipment of 10%.

The court says that it was the evident intention of the legislature "to secure as even a distribution of the expenses as it is possible to obtain." It would seem then that either an amortization plan should be used and a percent charged for the use and depreciation of equipment or that the original equipment be considered an expense made for the corporate purposes of the high school district. In the case that the amortization plan is used the expenses for equipment for replacement should not be included because it would result in a double charge. Since the court says that *all of the expenses incurred by the school district* in *maintaining* the school should be charged I believe it would be better to consider money spent for replacement of equipment as one of the expenses to be pro rated.

There are two other statements in this decision which may be of general interest although they are not on the question we are discussing.

The first is that the high school board is under no obligation to take non high school pupils if by so doing they are depriving their own pupils of proper school facilities.

The second is that the court declares that there need be no uniformity in costs as between districts.

This would preclude the non-high school board from attempting to set a single uniform rate for the county.

NOTE—There is a case in the Supreme Court now from Edgar County which will settle some of the questions of the tuition rate.

7. THE ENGLISH SECTION

The sixteenth annual meeting of the Illinois Association of Teachers of English convened at the University Place Christian Church Nov. 24th. The meeting was called to order by the president, Miss Clara M. Hawkes, at 9:15. The secretary gave his report as did also the treasurer. Following this the president appointed a nominating committee consisting of Mr. A. F. Trams, Miss Eva Mitchell and Miss Thomas. The session then proceeded to the reading and discussion of papers.

Of these the first was presented by the president urging the general adoption of "minimum essentials", protesting against the repetition of the same classics in the reading lists of successive years, and advocating the standardization of the reading lists as an important part of the intelligent revision of our high school English courses. She strongly favored the grouping of students according to ability, and the introduction of differentiated courses.

The paper follows:

Minimum Essentials Plus

Clara N. Hawkes, Cicero

Since a president is so manifestly a mere bird of passage alighted briefly on the official bough, it cannot be thought vain-glorious if he view with pride the organization tree where he finds himself.

Those of us who have been members of the Illinois Association of Teachers of English for some years believe that it is an organization worthy of honorable mention, of much value to us in the state, and of recognized standing outside. We know, too, that this high standing is the result of a few wise, optimistic, working leaders, their only meed the work they have done. This fact was underscored for us within the last few months when one such leader left us—Miss Skeffington, so actively with us last year. We shall not soon find a fellow worker more gracious, more intelligently constructive.

Yet happily others on whom we rely are with us, and new helpers come each year. To those teachers of English who may become members of this Association for the first time this year, we extend the hand of good fellowship. We assure you that we are not an organization that meets and then rests som-

nolent "until we meet again". We do. We conjugate that verb in all forms and tenses, have done, are doing, will do—WITH YOUR HELP.

This Association in its years of growth has built for itself a platform of beliefs. Some of its strongest foundation planks are minimum essentials. This Association was among the first to conceive the idea of standard minimum essentials in composition as an aid to better written English. The committee who worked out and formulated these in a final report gave so valuable and so useable a measuring system that it has had wide adoption in our state and has inspired similar standards elsewhere, greatly to the improvement of the mechanics of composition. If anyone here is not familiar with these minimum essentials, if your school has not already adopted them or at least some similar standard for guidance in teaching and testing composition, we urge you to get and use them. There is need. We are not yet getting the results we should from our teaching of composition.

Last year a committee from this Association with the help of some hundred fifty English teachers of the state worked out a tentative minimum essentials list of classics for high school study. The standardizing of a small body of high school reading in each of the four years, that shall prevent useless and wasteful overlapping, is the purpose of this list. Again we urge its consideration, especially in such schools as have no fixed English course or are reorganizing such course. This minimum list is not an ideal one, but surely it is a step in the direction of progress.

Last year when it was recommended that certain classics be declared static in different years of the course, the sad state of Thomas Traveler and Maud Mover was pictured, now subjected, perhaps, to three reincarnations of the Ancient Mariner or four of the Merchant of Venice. You smiled indulgently at the hyperbole. But truth often overtakes the most exaggerated fiction. Less than a month ago a fellow teacher said to me, "What would you do if a boy entered your *Silas Marner* class who had already communed with that esteemed classic *five times?* Wouldn't you let him read another book?" Verily, a teacher who would not should be turned over to the Society for the Suppression of Crime.

It is being done right here and now in Illinois, this haphazard placing of reading material. *Silas* for freshmen in the north, *Silas* for juniors in the east, *Silas* for sophomores in the south, *Silas* for seniors in the west. We protest—not that we love Silas less, but that we love all literature more. When in one town. *A Tale of Two Cities* is read in the eighth grade and by the seniors in the high school; when in one school Ivanhoe is taught to freshmen, sophomores, and juniors respectively, there is still work to do. At least a modicum of standardization of our literary material, not only in the high school but in the grades, should be urged and reurged.

This is not an effort at a dead level of uniformity—far from it. A minimum classics list aims only at fitting books where they best belong in the course, of making sure certain common literary elements which the youth of America have a right to. It may be a kind of common denominator to some of the fractions, proper and improper, of our English teaching.

Will you help this year in using and testing this minimum list?

The Illinois Association of Teachers of English, however, does not stand upon a platform of minimum essentials. These are planks only. The platform is minimum essentials *plus,* and it is the plus that the sessions this year are especially emphasizing. The Association does believe that minimum essentials in composition should be universally adopted and diligently administered. It does believe that some lists of a standardized reading should form the core of each English course. It also believes that the time has come to make use in our courses of some well-selected and tested modern literature. Your help is being asked in an investigation of such material. Will you give it—even if it means a bit of new or extra work?

Your home reading is not what you wish. Would you not welcome help in that problem? One of the Association leaders is at work upon one of the best and most comprehensive studies of that question ever made. Be on the lookout for that report.

The intelligent revision of the content of our English courses is surely one of our live problems, but not the only one. We believe that all of us would be helped by a defining of our objectives in high school English—not after the manner of some questionnaires on the objective, than which ingenious multiplicity can go no further, but a few simple, sensible aims that we could set before us like Stop! Look! Listen! signs to keep us in the highway of welldoing. It has been the experience of many of us that even one simple objective kept constantly in mind during the teaching of a classic or a series of composition lessons is a wonderful clarifier. Therefore consider the objective.

Another coming problem in our work is that of the differentiated curriculums for different grades of ability. Grouping together students of similar ability, this determined either by tests or teachers' judgments, will save great wastes for both the bright and the slow student—not to mention their instructor. We shall more nearly suit our material and our methods to the individual. It is lawful but perhaps not expedient that all freshmen read the *Iliad*. If they do, it is certainly bad business if all read it in the same length of time or study it in the same way. As teachers of English, we cannot afford to ignore this question of ability grouping and differentiated English curriculums. Our school may not be large. We may have no elaborate system of intelligence testing, but we can still do much in grouping students and fitting work to different abilities. It will decrease rather than add to our burdens. Let us keep informed on this subject.

Minimum essentials, objectives, new material to meet new social uses, differentiated courses to suit different abilities—here are some of the present problems of English teaching.

When we weary in the pursuit of the harmless, necessary comma, the elusive paragraph unity, or even the adventures of the amiable Ivanhoe, isn't it a bit heartening to realize that our subject has big problems in the solving, and that we, the English teachers of Illinois, may be helping in the solution?

Following the president's address Miss Thornsburgh presented a preliminary report upon the use of modern literature in the high school. The report is as follows:

Preliminary Report of Committee on Use of Modern Literature in the High School

The committee on investigation of the value of the study of modern literature in the high school has not much to report, as yet. A list of books used in the study of modern literature has been made out and mailed to most of you along with a letter and card explaining the purpose of this investigation. The letter reads thus: (page 2)

To Teachers of English in the Illinois High Schools:—

The Illinois Association of Teachers of English invites your cooperation in an attempt to estimate the value of the study of modern literature in the high school. To carry out this investigation it asks that each teacher participating shall use in class, either during the first semester of the present school year, or early in the second semester, one or more of the books included in the accompanying list and shall answer a questionnaire which will be forwarded about the first of March, 1923.

Care has been taken to make this list a representative one, but doubtless other collections of contemporary literature suitable for the high school may appeal to different teachers and may be used by them. The committee will gladly welcome information about any and all such books.

The committee in charge wishes

A. to summarize the opinions of a large body of teachers regarding the worth of modern literature as a part of the cirriculum in English;

B. to determine the attitude of pupils toward such literature and to gauge their interest in it;

C. to learn the teachers' estimates of different books and where in the curriculum the best of these should be placed;

D. to gather suggestions concerning the best ways and means of studying such literature.

If you are willing to cooperate in this experiment, will you please fill out the enclosed card and mail it at once. A printed copy of the results of this experiment will be sent to each of the teachers participating. Help us to help you.

Zada Thornsburg
Bloom Township High School
Chicago Heights, Illinois.

The card to be filled read as follows:

I am willing to cooperate in the investigation of the value of the study of modern literature as outlined in your letter, and to answer the questionnaire to be sent me about March 1, 1923.

Name .....
Address .....
Book or books .....
I shall probably use .....

Books Suggested for the Investigation of the Illinois Association of Teachers of English

Antin—At School in the Promised Land—Houghton, Mifflin and Co.
Barrie—Alice-sit-by-the-fire—Chas Scribner's Sons.
Burroughs—Squirrels and Other Fur Bearers—Houghton, Mifflin and Co.
Churchill—The Crisis—The Macmillan Company.
Cohen—One Act Plays by Modern Authors—Harcourt, Brace and Co.
Drinkwater—Abraham Lincoln—Houghton, Mifflin and Co.
Forbes—Modern Verse—Henry Holt and Co.
Fulton—Roosevelt's Writings—The Macmillan Company.
Galsworthy—Strife—Charles Scribner's Sons.
Galsworthy—Justice—Chas. Scribner's Sons.
Galsworthy—The Silver Box—Chas. Scribner's Sons.
Heydrick—Americans All—Harcourt, Brace and Co.
Ibsen—Pillars of Society—Chas. Scribner's Sons.
Laselle—Joy in Work; Ten Short Stories—Henry Holt and Co.
Laselle—Short Stories of the New America—Henry Holt and Co.
Law—Modern Short Stories—The Century Company.
Leonard—Poems of the War and Peace—Harcourt, Brace and Co.
Leonard—The Atlantic Book of Modern Plays—The Atlantic Monthly Press.
London—The Call of the Wild—The Macmillan Company.
Phelps—Select Stories from Kipling—Doubleday, Page & Co.
Pocock—Modern Poetry—Dutton and Co.
Ramsey—Short Stories of America—Houghton, Mifflin and Co.
Rees—Modern American Prose Selections—Harcourt, Brace and Co.

Rittenhouse—A Little Book of Modern Verse—Houghton, Mifflin and Co
Rittenhouse—A Second Book of Modern Verse—Houghton, Mifflin and Co.
Sedgewick—Atlantic Essays, Series I and II—The Atlantic Monthly Press.
Smith—Short Plays by Representative Authors—The Macmillan Company.
Tanner—Essays and Essay Writing—The Atlantic Monthly Press.
Thomas—Atlantic Narratives, Series I and II—The Atlantic Monthly Press.
Thomas and Paul—Atlantic Prose and Poetry—The Atlantic Monthly Press.
Thomas and Paul—Story, Essay, and Verse—The Atlantic Monthly Press.
Untermeyer—Modern American Poetry—Harcourt, Brace and Co.
Wister—The Virginian—The Macmillan Company.

The question which arises is, "How did our interest in the study of modern literature begin?" For the last two years an investigation has been carried on in outside reading, and one of the suggestions made by that committee was to include in our home reading list some modern fiction, essays, poetry, drama and biography. During the war such books as "Kitchener's Mob", "Over the Top", and "Hilltop on the Marne" proved to be great favorites among the students. The popularity of those books has diminished somewhat, but we now have others which are equally as popular and interesting as were the former ones.

Some of our English teacher friends allow students to read Harold Bell Wright—the modern Shakespeare to some children, Jean Stratton Porter, Mary Roberts Rhinehart, Kathleen Norris and such authors in order to form the habit of reading, and for the purpose of using their books as stepping stones to better books. One teacher has discovered that a boy who was fascinated by the Tarzan stories became interested in Seton, who represents jungle life as it really is and not as Burroughs imagined it. Most of us have included modern fiction, drama, biography and poetry in our outside reading list. Have our students profited by the change? Do they like the modern books as well as our old classics? Have they suffered morally from this substitution?

It is because of the good results obtained from this investigation that we are interested in the value of the study of modern literature in our classes. A number of you are already using many of the books suggested on the list, and perhaps have found them very valuable. Another reason why we are interested in the study of modern literature is the changing tendency in the teaching of English—the attempt to make it correlate with the pupil's life and the life he will lead. Not only is this true of English teachers, but also of teachers of other school subjects who are trying to make their material more practical. One of the aims of the teaching of literature is to affect, in some way, the conduct of the child. If we are going to "get across" the idea to our pupils that characters in books act and respond just like real people, we ought to be better able to appeal to them by showing them what are the true American ideals of conduct, right living, better speech and characterization represented by modern writers of standard literary caliber.

Perhaps all of you are not aware of the fact that the new college entrance requirements, 1923-1925, make place for and suggest in Group *E* two of the following to be chosen to take the place of two classics in the regular course:

1. A modern novel.
2. A 150-page collection of short stories.
3. A 150-page collection of contemporary verse.
4. A 150-page collection of prose writings on matters of current interest.
5. Two modern plays.

The problem of what to study in modern literature is a very serious one. The subject matter, interest, editorial introduction and notes should be considered seriously before a book is chosen. Not only should the book and its contents be regarded but also the literary tastes of the compilers. Collections of modern verse, stories and essays are often compiled and edited by people who

lack literary taste. By what standards are we to judge these collections and books? This is one of a few of the problems which is presented, showing us that care and caution need to be used in the selection and the teaching of modern literature. By co-operating with this committee and by answering the questionnaire which will be sent to you on March 1, we shall endeavor to help you. We shall be glad to receive suggestions which might be made regarding other books not given on the list.

You have responded in a splendid way as shown on the cards returned to me. Three hundred and forty-five cards were sent out and 87 have been returned. Only 4 have replied that they could not co-operate. I have tabulated some of the results which show that many of the suggested books are being used now.

The report from 69 schools in this state shows that the most popular books are:

Drinkwater's "Abraham Lincoln",
Heydrick's "Americans All",
Churchill's "The Crisis",
The Atlantic Books "Prose and Poetry", "Atlantic Narratives", "Story, Essay and Verse", "Atlantic Essays", "Essays and Essay Writing", "Atlantic Book of Modern Plays",
Law's "Modern Short Stories",
Rittenhouse's "A Little Book of Modern Verse", and "A Second Book of Modern Verse",
Galsworthy's "Strife" and "Justice",
Burrough's "Squirrels and Other Fur Bearers".

I hope that as a committee we shall be able to help you (1) to decide what modern literature to teach, (2) to determine the attitude of pupils toward it, (3) to estimate the value of such literature. Next year at this time we shall endeavor to have something more definite in the way of a report which will be a real contribution to our department.

Professor Paul supplemented this report with a brief bibliography of available books in modern literature. The final paper of the forenoon was read by Mr. Trimble, assistant high-school visitor. He began by pointing out certain evils in the situation as regards English. Among them he especially deplored the habit of applicants for teaching positions of underscoring as many subjects as possible, on the mistaken assumption that by this means they will be more likely to secure a position. The actual result is that too many ill-equipped teachers of English are serving in the high schools of the state. He said that too many teachers have gone to seed on the subject of oral composition, using it merely as a means of escape from the drudgery of correcting written themes. By making the written themes shorter he thinks better results will be secured. He advocated also that schools plan for thirty-six "good English" weeks in the school year to be secured through the co-operation of all the teachers in the high school. His paper is here given in full:

The Teaching of English in the Illinois High Schools

Harold D. Trimble

It is said that when Thorwaldsen, the great Danish sculptor, unveiled his statue of Christ he was seen to weep. His admirers, who had come to congratulate him were astonished to hear him say: "My genius is decaying." "What do you mean?" they asked. "This statue," he replied, "is the first of my work that has ever completely satisfied me. Until now my ideal has always been far beyond what I could execute, but it is so no longer. I can never create a great work of art again."

The principle thus expressed by this great artist is true for all time; it is true for teachers of English as well as for sculptors and painters. Whenever teachers of English catch up with their ideals, whenever they are completely satisfied with their work they are doomed. They cannot improve because they cannot imagine a degree of perfection beyond that which they have already attained.

As a representative of the High School Visitor's Office and as one who has been in the field as an observer of the high schools of the state for the past three years, I have found that the real English teachers of the state have no such feelings of satisfaction with their work as did Thorwaldsen, the great Danish sculptor.

It is my understanding that I am to limit my discussion to the English of the smaller high schools. The English work done in these schools should be no different from the English work as done in the larger schools. However, the truth of the matter is that conditions are very much different in many respects. Here is where the beginning teacher is found; it may be she has had four years of college work and it may be that she has had but two years of work beyond the high school. It may be she was reared in a family where the reading and discussing of good books and literature was an established custom. It may be she was reared in a family where only a meagre library and scant literature of current interest were to be found. Naturally should she come from this home her background for teaching English is not to be compared with that of the teacher who comes from a family of a literary inclination. It may be that the teacher in the smaller school has had a course in the pedagogy of teaching English or it may be she is limited to her own ideas and possibly the methods of instruction used by her teacher of English, who in turn might have been handicapped by like limitations.

In a very large percent of these smaller schools, the teacher of English is also the teacher of physics, Latin, history, and general science, or some assortment of classes similar to this. The principal has seen fit to distribute the English classes to as many teachers as there are English classes to be taught, evidently feeling sure that *anyone* can teach English. And why does the principal presume so much? Various reasons might be given. Possibly the board has employed all of the teachers and all have come with the expectation of teaching English or possibly none of them has come with the expectation of teaching that subject. In case all the teachers have come with the expectation of teaching English, the principal attempts to please all by distributing the classes; and in case none of them came with the expectation of teaching that subject, they must also be distributed. Too often school boards believe that because one has a diploma from a big college or university she should be able to teach any subject in the curriculum.

Then, too, another element enters which accounts for the fact that so few of the smaller schools have the English classes assigned to one or two teachers instead of distributing them generally. Too many of the teachers of our schools have an idea that their chances for securing positions are greater if they indicate that they have ability to teach a very large variety of subjects. I believe that teachers indicate that they have ability to teach English more often than they

indicate ability to teach any other subject. Too many of these people have not read enough literature to justify the attempt of teaching the most difficult subject in the whole curriculum. The principal has the application blanks before him when the program is made; he notices that most of the applicants have underlined English three times, hence he tries to please all of them by assigning them subjects in which they indicate greatest ability. Possibly the teacher did not want the subject, she wanted only the position, and she was willing to take a chance on having to teach it in order to be located for the year. The better principals are learning the habits of these precocious souls who are in their own opinion able to teach any subjects which may be assigned to them.

In these smaller schools the teachers of English are too frequently new each year; they are too migratory, hence they are unable to do much constructive work. Why are they a migratory lot? Many reasons might be given, but the *real* English teacher aspires to get into a school where she may be able to teach English in a well organized department. English is her specialty, and that is the subject she wishes to teach. Often these souls leave one school to go to another of similar size and for a fifty dollar increase in hopes of finding conditions better, but disappointment awaits them. They make inquiry as to how the work has been done, and they are told by the principal or superintendent that the English course has never been organized, and they are to feel free to work out the course as they desire and to teach the classics the pupils have not had already. This information is obtained by a show of the hands when the classes are first called together and at the end of the year, the course—if we may call it a course—is as much jumbled as ever. These teachers leave at the end of the year, new ones take their places in the following fall, and the process is repeated. Thus they move on and on and on. When there is no definite organization of the English work of the state, is there any wonder that there is no greater improvement in the English work as done in our smaller schools? Is there any wonder that the mortality in our Freshman Rhetoric Classes is as great or greater than in any other college course?

School boards and principals do not realize the importance of retaining the good teachers of English. Funds are usually low and they are sure that they will be able to find English teachers, hence sufficient inducements are not made to retain those who have proved especially successful. School boards are not going to realize a shortage of real English teachers until those who apply for positions of other subjects cease indicating ability as teachers of English. Until you people succeed in convincing your boards and principals that your subject is the most difficult subject to teach in the whole curriculum you are going to be burdened with the largest classes and the largest number of classes in the whole school. Until you convince them that the real English teacher has something more to do than to hear the pupils *read* their classics to them five or six or seven periods of the day, you are going to be held responsible for putting on the junior and senior plays, sponsoring literary societies, directing debates, coaching the contestants in learned oration and declamation, and doing so many other extra-curricular activities that you know about even better than I.

It is easy to convince the English teachers of the mistakes made by the administration; it is not so easy, however, for them to realize the mistakes in their own pedagogy, and yet mistakes are there.

Teachers of English, as well as teachers of other subjects, have the habit of talking too much in their classes and really doing the reciting for the pupils. If our pupils are to develop as they should, they must be permitted to think for themselves; they must express their thots in their own words. Some of the English teachers of the state have shown us what the school and the teacher should aim at; what any school and any teacher can accomplish if they will. From the beginning these teachers arouse interest. How is it done—this most difficult thing, which so many have tried with such little success? How do these teachers banish indifference and inattentive restlessness of which so many teachers complain?

First of all, these real teachers of English have discovered that children of all ages and of every class automatically become interested in their work if it be put before them in the right way. No intermediary is necessary if the literature be suitable to the classes to which it is given; the children will know how to deal with it without elucidation. Have you as English teachers been mistaken in thinking that they cannot? Have you been guilty of interpreting between them and their writer? Are you in the habit of elucidating the points of the lesson in lengthy discussions and ending them by questions like these: "It is, isn't it?" "They did, didn't they " "That was true, wasn't it?" "That's clear, isn't it?" He doesn't, does he?" Pupils watch for the mental attitude of the teacher and they meet the situation by answering "yes" or "no", and invariably their answers are correct. They know each time what the teacher wants them to say, and they always desire to be agreeable. If you must elucidate, give your pupils an equal chance for their development by requiring re-applications and re-statements of your elucidations. Do not feel that you must hurry on and ask some more of the "Is-that-clear?" kind of question. Have you not realized that your pupils prefer to do their work themselves and if permitted to do so that they are going to develop a power with which they have not been credited? The real teachers of English are those who bring out the personalities of the various individuals in their classes by having them think and express themselves as individuals. When this is done the individuals are not merged with those fifteen, twenty or thirty others in that artificial and soulless entity, the class, as is so often true in classes conducted by teachers who prefer to do the reciting themselves. Pupils who have real teachers of English for their instructors come to their classes prepared with their lessons. They have learned that narration must follow each assigned lesson, hence their attention has been compelled, and the content of the lesson is so well fixed in mind that they satisfy searching examinations each day. These people have no fear of the tests that await them at the close of the semester. The great pieces of literature are the real educators of mankind. Why then should they not prove to be superlatively the best teachers of our pupils, if they be studied under the direction of those who have objectives in mind for the teaching of them?

Too often teachers make reading lessons of the classics studied and the story of the classic seems to be the sole objective. The recitation too often begins:

"Open your books to page 33, chapter 8." "Will you please begin the chapter, Mary?" Mary begins. "That will do, Mary." "Will you continue, James?" "Thank you, James." "Elizabeth, will you go on from there?" "John, will you proceed and read to the end of the chapter?" "Now, Henrietta, will you please tell the story as far as we have gone?" Thus they begin, proceed, continue and finally tell the story. The bell rings and the teacher makes the assignment as follows: "We'll take the next three chapters or over to page 56." Do the pupils read the next three chapters? They do not. Why should they? They will read them next day in class and why go to the trouble to read them before? If the teacher should decide to discuss these three chapters next day, omitting the reading, the response could not help being a poor one. Even tho the pupils had accidentally read the chapters, the response would have been a poor one because the assignment was indefinite. The teachers who make definite assignments are the teachers who get the results in their classes.

How many of you are guilty of announcing as the next assignment: "We'll take the next three chapters," or "Take over to page 72," or "Read the next three acts?" If you are in the habit of making assignments of this kind, please try a more specific variety and then notice the result upon your class response. If it be necessary, take twenty of the forty minutes in making clear to your class certain definite things which you expect them to accomplish before coming to class next day. Experiment with this method for one week and see what effect it has upon the attitude of the members of your class. Have your pupils study for a purpose and see if it will not take the grouch out of their work.

I am afraid some of the teachers do not always know just what to expect their people to do for the next day. Judging from the recitation it would seem that they just expect them to be able to *tell about* everything. They sit at their desks and ask these "what about" questions; "tell all you know about"; "you tell some more about"; "what else do you know about"; "you tell some more about"; "what else do you know about"; "who can tell some more about"; "you go on and tell some more about". They move on to new topics and thus the recitation continues until the signal announces the close of another class period. When I see teachers conducting recitations in this way, I cannot help thinking, "Whither goest thou?" One who keeps a class in this fashion can have no worthy objectives. These teachers are merely going toward the end of the period or they may be trying to reach the end of the day or Friday afternoon or the close of the semester. These teachers seem to regard all the points of the lesson of equal importance, and they just wanted the pupils of their classes to know all about all of them. Wouldn't it be a good idea if teachers would formulate in their own minds an objective for each recitation?

English teachers should have objectives in mind for the teaching of the various classics studied; there should be a reason for the assignment of each composition lesson, and they should know certain definite things that should be gained thru the reading of the various books included in the outside reading list. Moreover, successive lessons in all three of these parts of the course should be definitely related. The real teachers of English do know where they are going; they have certain definite things to accomplish the next day, the next week, the next month and so on to the end of the year.

How often I have wished that I were able to take down in shorthand the recitations as I hear them conducted! Sometimes the teacher asks so many questions and in such rapid succession the pupils do not have time to think, yet the teacher feels she must hurry on. These are a few of the questions which I was able to write down in the course of a ten or twelve minute visit in an English class not so long ago:

"What can you tell us about the climax?
What can you tell us about the climax?
What can you tell us about the life of Mark Twain?
What can you tell us about the life of Mark Twain?
What do you know about Edgar Allen Poe?
Go on and tell all you know about his early life.
What other points did you want to add?
What kind of prose have we talked about so far?
What did you learn about Stevenson?
What did you learn about Stevenson?
What did you learn about Stevenson?
Give the main points in his early life.
What other points?
What other points?
What about his life after he studied law?
Can you give us any other points?
What else do you know about him?
What did we say was the setting of Tom Sawyer?
What other points did we have to remember?
About what time did we say?
Did we have any introduction and what did we have in the introduction?
Was there anything interesting in the story of Tom Sawyer?
What do you think about that?
Tell me, do you find any statement that we may call a topic statement?
John, what about that?
All right, Charles, read the first paragraph.
All right. What can you say about the paragraph?"

In this short visit *all right* was repeated twenty times. This teacher is a good conscientious teacher, but she needs to have better fixed in mind a few things which she should accomplish during her recitation periods. She should make her pupils feel that there were in her mind certain definite points that they must get. The real teachers of English are more deliberate in their methods; they ask fewer questions and the pupils are the ones who do the work.

Even the English teachers themselves fail too often to demand *good* oral English from their pupils. Grammatical errors are made which are passed by unnoticed. Too frequently the teachers of English accept one word or one phrase answers, and pupils often assume lazy attitudes in their classes, thus making good work impossible. Pupils do just exactly as they are permitted to do. Then, too, pupils possess that rising inflection habit seemingly unnoticed by their teachers. Recitations are made by one pupil after another and after each affirmative statement is found the mark of interrogation as if to say, "Dear teacher, is that right? I'm not sure." Why can't we demand more confidence on the part of our pupils?

I know of some teachers in the state who find it almost impossible to teach English composition as they would like to do. They are beginning teachers whose programs are so unmercifully heavy that the best work is out of the question. Then, too, there are some teachers who seem to have a natural aversion to the teaching of this phase of English work; they prefer to teach the English classics, and as a result composition is sacrificed. Their intentions are good, and all goes well for a few weeks. The classes are large, and the time element enters in; the teacher has collected several sets of papers which she has never seen. She wonders if she will ever catch up with her work. How often have I heard pupils inquire if their themes have been corrected, and the usual response is, "No, I haven't had time to grade them yet." The teacher does not realize that she has no right to ask pupils to write themes which she is unable to correct before new ones are due. Yet very often the teacher is simply swamped. This is when she resolves to lessen the amount of written composition work. She decides to do more oral composition and thus lighten her work. It seems to me that too many teachers have gone to seed on oral composition, which is often no more composition than "Mother Goose" is poetry. The pendulum has swung too far in that direction; written composition is the variety that should be stressed.

These teachers who are finding it difficult to teach English composition as they would like might make it easier for themselves and for members of their classes if they required shorter themes. Why not teach your pupils to write one sentence correctly and then the paragraph? Then would not the whole theme take care of itself? Teachers should be more painstaking in the correction of sentences and short paragraphs. In the long themes, the pupils make the same mistakes all through them; the teacher marks the same errors on two, three, or more pages when six lines corrected accurately might serve the same purpose.

I find that sometimes teachers make the mistake of giving definite topic assignments for composition to various individuals of their classes. Do you believe that a child should be asked to write a composition on a subject which is not clear and distinct as a personal experience? Is it not natural that these vague subjects and glittering generalities should destroy the child's interest in the composition lesson? It is better for your people to write bad English with punch to it than to write correct English that is dull. No teacher should ever take it upon herself to assign definite composition topics to individuals in her class. A wide variety of subjects should be submitted, and each pupil should be permitted to select the ones in which he is most interested.

The teacher of English should tactfully solicit the cooperation of other members of the faculty in insistence upon good English in all classes. Real English teachers are able to make other members of the faculty feel that they have no right to shake off responsibilities in urging that correct forms on

English be adhered to in reports, examinations, note-book work, etc. If we are to gain the desired goal, all teachers must be teachers of English. Poor English is passed over unnoticed when, if the pupils were given a chance and encouraged to do so, they would through criticisms of each other eradicate many errors that are now so prevalent in our schools. Incorrect English can not be wiped out by one "good English week" out of 36. There must be 36 Good English Week instead. The English teacher must have the co-operation of the whole high school faculty throughout the year if noticeable results be attained.

Those of you who have read the English Journal for June, 1922, will remember an article contributed by George P. Wilson of the University of Wisconsin. The subject of the discussion was: "What is Wrong with High School English?" A questionnaire was submitted to sixty freshmen at the University of Wisconsin, the object being to determine the reason for their noticeable weakness in English. These four extracts from the answers to the questionnaire are typical and speak for themselves.

1. "We hardly had any composition at all during the fourth year. We only wrote one theme the whole year and had about one week of grammar in preparation for the second semester's work. Unfortunately, I had teachers, who regarded diagramming, sentence structure, punctuation, etc., as an unnecessary waste of time. The thought was the main thing stressed in the themes; the faulty mechanics might go almost unnoticed. Consequently I graduated from high school with but little knowledge of grammar, spelling, and punctuation."

2. "My greatest weakness is punctuation and grammar. I am not trying to heap all the blame on my high school work, but I do honestly think it is the chief cause of my defect. When I left the grades, I knew grammar pretty well, but I forgot it during high school on account of lack of practise. When I entered the freshman class this fall, such things as co-ordinate conjunctions, dependent clauses, participial phrases, and so on, seemed like new words to me, and I had no definite idea as to how to punctuate."

3. "English, as studied in my high school, was a subject in which it was easy for me to receive good grades. I wrote good themes, as to material used, with very little preparation. The study of literature was very easily bluffed, and grammar, punctuation, and spelling were taken up so loosely that one could usually rely on the way an expression sounded or looked as to whether it was correct. The natural result is that I have regarded English as an easy subject. My first six weeks here, however, have shown me that it is a course that requires fully as much study as any course in the university."

4. "As nearly as I can remember, all the composition I had in my high school was during my freshman year. The other time I spent reading the Bible, and English and American authors."

Upon tabulating the results of the questionnaires the following conclusions were reached:

"1. That 100% of the students who received F (failure) were so graded primarily because of weak mechanics.

"2. That students whose mechanics is weak become fully conscious of the fact when they undertake college Freshman English—tho it be an eleventh hour awakening.

"3. That students taught by high school teachers who stressed mechanics made higher college grades than did those whose teachers stressed the thought of the themes.

"4. That the students who spent the most time on composition received the best college grades—exceptions to be noted, however, in the case of the three 'A' students who were unusually intelligent.

"5. That students with a reasonable amount of theme writing but with only a small amount of theory and class discussions of themes received lower grades than other students with less practise in writing but with more theory and class discussion."

The attitude of the freshman at the University of Illinois seems to be no different from that expressed by these Wisconsin freshmen. A year ago last fall, Dr. Scott of the English Department of the University of Illinois submitted a questionnaire to all of the freshmen of the University enrolled in the Freshmen Rhetoric classes. I have been very much interested in the replies given to the following questions:

"1. Were your themes corrected?"
"Yes" is almost the uniform answer given to this question.

"2. Were you required to return your themes again corrected?"
"No" is given as an answer to this question by a percentage that is entirely too large.

"3. Judging by your experience this year, how do you think that your preparation could have been improved?"
For this question there are striking similarities in the replies given. most of the freshmen here sense the same needs and express them in a slightly different manner.

The following excerpts are representative replies:

"More themes properly corrected and handed back corrected."

"By having more emphasis put on theme work."

"Spent too much time in Senior Year on studying the history of English Literature. Time could have been better spent on grammar corrections."

"In some cases better teachers. They were not strict enough in demanding good work."

"More themes and more individual conferences."

"If the high school teachers had have required more themes to be written and if they had have paid very strict attention to foolish mistakes my preparation could have been improved."

"Themes were neglected during the third and fourth years."

"This could have been improved by marking lower and making us write more themes and better ones."

"The fact that I had four different teachers and four different methods of instruction was a handicap."

"If we had been required to correct our themes and return them corrected I would have been benefited.

"Close grading by instructor and more themes."

"My preparation could have been improved by having to return the papers corrected. Papers should have been corrected rather than merely graded.

"By having written composition at least once a week during the four years. This was contrary to my attitude then."

"The themes might have been handed back for correction. If I had been able to write on subjects of my own choice."

"The course seemed all right, and it merely rested with the student to apply himself to get a thoro preparation."

"My own daily preparation should have been better. My teacher could not get me interested in the course."

"More written themes instead of so much oral work."

"By writing shorter themes and more strict form of grading."

"I think that composition should be made a part of the English course for each of the four years."

"More themes should have been written; the themes should have been corrected more carefully by the teachers; pupils should have been made to return them corrected."

"My preparation could have been improved had I been compelled to correct my mistakes; a repetition of a mistake should have been graded a failure."

"More severe criticism on themes."

"My high school preparation could have been improved by more study on my part and if the high school teachers had been more critical."

"I could have been improved by having to write more themes in H. S. and having had them returned for correction so we could have seen our mistakes and improved next time."

"Instructors in high school should be more strict. They are not interested enough."

"Topics for themes were usually assigned."

"Having written more themes. They weren't strict enough. If they liked you, you got by."

It would be possible for me to continue indefinitely quoting these frank statements made by these, our own University freshmen. Practically all of them seem to be of the same mind regarding the weakness of their courses in composition as given to them in our high schools. In view of these facts what should you as an organization of the English teachers of the state do about it? If composition writing is what our high school people need, then why cannot the work be so organized by this association to meet these needs? Would at least two days per week throughout the high school course be too much to require? Would it not be better to recommend that it be given an equal amount of time each year than that it be given so continuously the first and second years and that practically none be given to the third and fourth year people?

Why is it that so many of our English teachers find the history of literature such a difficult subject to teach? I believe one of the principal reasons for this is that it is too often taught in a way unrelated to the classics studied. This semester I have asked many teachers of third and fourth year English what classics they have studied this semester; I have also made inquiry as to the amount of composition work done. The replies are very much like this one: "Well, we haven't studied anything but the history of literature; we are trying to cover it this semester. I am having such a hard time in arousing any interest on the part of the children; they do not like it at all. We expect to take up the classics the second semester and then I expect them to do a little composition altho we will not have very much time for it." These teachers, it seems to me, feel they must cover every point in the various periods, and that their pupils must know when all the writers were born, whom they married, the number of children in the family, etc., etc., etc. They do not seem to realize that many of the details of the various periods may well be subordinated and that stress needs to be placed on the outstanding characters and movements. In my opinion the history of literature, the classics, and the work on composition should all be paralleled throughout the third and fourth years. Pupils should be made familiar with the types of literature of the various periods studied, and most certainly the study of the literature should parallel the history of the period in which it was written. If it were managed in this way I believe that the work would prove to be more interesting and profitable to both teachers and pupils.

Miss Florence Crocker, Head of the English Department of the LaSalle-Peru Township High Schools, has one of the best third and fourth year English courses which I have seen in the state. For the benefit of those who may be having difficulty along the line suggested I refer you to the following brief outline of the course as organized in the school referred to.

The History of English Literature

Junior Year (Two Semesters)

Text-books:

Andrews—*Twelve Centuries of English Poetry and Prose,* published by Scot, Foresman Company.
Rich—*A Study of the Types of Literature,* published by The Century Co.
Shakespeare—*Macbeth,* Sherman Edition, published by Henry Holt & Co.
Carlyle—*Essay on Burns,* published by D. Appleton & Company.

References:

Halleck—*History of English Literature,* Pancoast, Gosse, etc.

Content (first semester):

I. Period of Preparation, 449-1400
   A. The Anglo-Saxon Period, 449-1066
   B. The Norman Period, 1066-1400
II. Period of Italian Influence, 1400-1660
   A. Period of Renaissance, 1400-1558
   B. Elizabethan Age, 1558-1603
   C. Puritan Age, 1603, 1660

Content (second semester):

III. Period of French Influence, 1660-1740
   A. Restoration Period, 1660-1740
   B. First Forty Years of the Eighteenth Century.
IV. Modern English Period, 1740-1900
   A. Period of Conflict between Classicism and Romanticism
   B. Period of Romanticism, 1780-1837
   C. Victorian Age, 1837-1900

Method and Classics:

1. Outline as given above used as a table of contents for permanent note book.
2. Historical background and literary characteristics of each age written from reference books, recited upon, revised in class, and finally copied or typewritten in note book.
3. The lives of Chaucer, Milton, Wordsworth and Browning outlined.
4. The characteristics of each author written as a theme after class study and kept in note book.
5. The work of each author in *Twelve Centuries of English Poetry and Prose* studied under the proper period.
6. All the classics studied as they fit into the history. Work on the classics kept in the proper place in note book.

   Hamlet, 4-6 weeks. *(A Study of the Types or Literature)*
   Macbeth, 6 weeks.
   The Tempest, 7 days. *(Twelve Centuries)*
   Milton's minor poems and *Paradise Lost,* 8 weeks.
   Carlyle's *Essay on Burns* after Burns' poetry, 2 weeks.
   The poems of Wordsworth, Byron, Shelley, Keats, Arnold and Browning in detail. Coleridge and Tennyson omitted because taught in other years.
7. Minor authors' works read for outside reading in right order or omitted if time does not allow.

8. Study of the *Types* by Rich. When a new type of literature appears in Newcomer-Andrews, it is first studied in Rich's *Types*. The study of Spenser and Milton is made especially easy by Miss Rich's method. Important classics omitted in Newcomer-Andrews, such as *Comus* and *Hamlet* are given entire in the *Types* with comprehensive questions. The work in the *Types* is not recorded in permanent note book. (Note: The *Types* gives an inspiration for theme work, especially in the writing of poetry.)

A History of American Literature

Senior Year (Sixteen Weeks).

Text-books:

Newcomer-Andrews, *Three Centuries of American Prose and Poetry,* published by Scott, Foresman & Company.
Heydrick Reading Reports, published by Scott, Foresman & Co.

References:

Newcomer's *American Literature* (16 copies in the library); *Essays and Essay Writing,* Tanner; *The Art of the Short Story,* Grabo; *A History of American Literature since 1870,* Pattee; *New Voices,* M. Wilkinson; *The Atlantic Monthly* and *Atlantic Classics.*

Outside Reading:

One representative American novel.
Twenty short stories.
Modern poetry. (Selected poets.)

Method:

Intensive study of Poe, Hawthorne, Emerson, Lowell's Essays and Whitman. Reports in class on the works of the other important writers in *Three Centuries*—historical order. Frequent tests on authors. Tests on periods of the literature.

Composition Work—Weekly Themes:

A study of the short story in connection with the work of Poe and Hawthorne, 6 weeks. A study of the familiar essay, 6 weeks. One theme a week required for 20 weeks. A thesis of twelve pages required instead of a final examination, the thesis being based upon some phase of American literature.

Why not try this plan of correlation in your third and fourth year English courses, and see if this be not more satisfactory than your present method of handling the work in these advanced classes? There seemed to be no noticeable dislike for English on the part of the juniors and seniors of the school using this outline, and there must be reasons for the interest shown. I believe there are two: the teacher and the well organized course. All schools cannot have the teacher, but the outline, as used in this school, I am passing on to you in hopes that it may be suggestive to you in remodeling your course if it be not satisfactory.

Do you have as an alibi for not doing better English work that your library is too inadequate? Please do not offer that as an excuse again. If your school can be an accredited school, your board should be able to buy all the library books you need. The teachers are frequently as much to blame as the boards for the meagre libraries often found in our smaller high schools. Boards are conservative, it is true, and they do not want to spend any more money than needs to be spent to keep their schools up to the standard. How-

ever, if you or your principal can succeed in convincing your board members that you really need all that you are asking for, there is little doubt that those needs will be supplied. I have often found in my tours over the state that boards appropriate larger sums for books than are ever spent. The books are not bought because the teachers do not urge that the purchases be made. Are teachers of English always sure what they really want?

What do you do about "visiting days"? Do you visit the English teacher who lives in the town next to yours, and after you have spent the day with her do you go back home happy and content with the fact that you are doing as good or better work than she? Did you have an idea that she was a better teacher than you were and that you could really get some ideas from her? Or did you believe that possibly after visiting this teacher you could go back to your own work with a feeling of greater satisfaction? When you are given an opportunity for a visiting day, make it a point to visit some of the teachers who have put their schools on the map because of the superior work done in the English Department. If you cannot do this, you had better stay at home, as it will do you no good to visit teachers no better than yourself.

"Visiting days" are all right, but I fear that they are frequently taken at the wrong time. Too often teachers take their visiting days" on Wednesday or Thursday before their district conventions. They visit the school of the town where the convention is to be held. They go en mob. As neither the teachers nor the pupils are seen at their best, this practice should most certainly be discouraged. Visit the teacher who is generally recognized as being superior; visit her at a time when her work is moving along normally, and then make use of the ideas gained by the visit.

Do all of you know about the *English Journal* published by the Press of the University of Chicago? Each English teacher of the state should read this magazine regularly and should use the suggestions found in the articles that appear in each issue. English teachers cannot afford to be without a magazine of this kind.

Do you know that book companies are unusually generous in sending to teachers for examination all kinds of books? Why not know about some of the newer ones on the teaching of English? I am sure if some of the English teachers were more familiar with the content of these books they would cease teaching by the old page-chapter-scene-act method. Invest a few pennies in postage stamps and write to some of our leading publishing houses for catalogs listing books that might interest you. Tell them your needs, and ask them for recommendations.

Do you know that the book-men are your friends? Are you always as cordial to them as you might be? Why do I suspect that you are not? So often teachers half apologize to me for not giving me more attention, and when I tell them my business they say: "O, I beg your pardon, I thot you were one of *those book-men.*" Those book-men are your best friends; they are able to talk to you about the newer publications, and you are the ones who are going to profit by their suggestions if you will only let them know your needs. Give them more time than has been your custom and see if it be not worth your while.

A few years ago this association started a movement for the establishment of a standardized minimum list of classics to be studied in the various years of the high school English course. This matter was brought before the association last year, and it is emphasizing the same thing this year. This list as recommended has been sent broadcast throughout the state to all the accredited high schools. The list as distributed follows:

First Year	Third Year
Poe's Tales (selected)	Prologue to the *Canterbury Tales*
Treasure Island	*Macbeth*
Merchant of Venice	DeCoverley Papers
Sohrab and Rustum	*Essay on Johnson*
Lady of the Lake	Palgrave's *Golden Treasury*
Iliad or *Odyssey*	
Second Year	**Fourth Year**
Silas Marner	Emerson's Essays (selected)
Ivanhoe	*Hamlet*
Tale of Two Cities	Burke's *Speech on Conciliation*
Julius Caesar	
Ancient Mariner	
Idyls of the King	

This is not a perfect list. No one claims that; but it is at least a start toward establishing a standard in the schools of the state. It should be especially valuable to those who have no definite English course and to those who are in the process of evolving a course in that department. Why not make this your English course? It is backed by the English teachers of the state, and that is no mean thing.

Do all of you know about the Minimum Essentials in Composition as worked out by a committee of this section of the conference? They were approved by the conference, and the pamphlet should be in the hands of all the English teachers of the state. The best teachers of the state are using it to advantage. Why don't you use it too? It will help you in determining the points that should be stressed in your composition classes.

Now it seems to me that this association cannot urge too strongly that the schools of the state adopt the minimum list of classics referred to. It should also emphatically urge that the Minimum Essential pamphlet be used in all the composition classes of the state.

In as much as a minimum list of classics has been formulated this section of the association should now appoint a committee to formulate a set of objectives for each of the classics outlined. This committee should be asked to make a complete report at the conference next year. If this should be done would it not be interesting to note the effect this report might have on the minimum list of classics selected? I wonder if our minds may not be changed in regard to the value of some of them which seem to be holding such important places in our English courses. Eventually, I believe that we shall realize that all good authors are not necessarily like good Indians,—dead ones. If the association be not ready to formulate objectives for each of the various classics listed, it might be well to formulate objectives which should be aimed at for each of the four years of literary study. It seems to me, however, that this association should be ready now to carry out the former suggestion and really find out the reasons for the particular list suggested.

The value of outside reading in English cannot be over estimated; but as it is often managed it seems to me that it is farcical in nature and for no other reason than that the teachers are often unfamiliar with the books read. That need not be surprising in view of the fact that the list is so long and varied. Would it not be advisable for this association to present at next meeting a minimum list of outside reading books for each of the four years of high school English? If the list of books were reduced to a minimum, it would be possible for the beginning teacher to know more thoroly the content of each book read. For these inexperienced teachers of English even a poor limited list would be better than an unlimited list of good, bad, and indifferent books. Would it not be advisable for this association to appoint a committee to formulate objectives for the use of possibly sixteen of the books that seem to be generally

recognized as especially suitable for outside reading purposes? It seems to me that it would be well for this committee on objectives to be set to work on the list finally recommended.

In conclusion I should like to suggest that the English teachers, who attend summer schools, take more courses in the pedagogy of teaching English in institutions offering courses of this kind. English teachers need to take more practical courses dealing with the methods of teaching the classes and composition. They need to become more familiar with text books on English and English teaching. They need to know about up-to-date books and magazines that would be helpful to them in doing their work more satisfactorily. They need assistance in working out objectives for the various phases of English courses offered. They need to learn how to parralel more successfully the courses in the history of literature, the classes, and composition. They need to realize more fully the necessity for clear, definite assignments. They need to be more familiar with literature generally, and I know of no better way of meeting these needs than by taking good summer courses dealing with them.

I should like to suggest also that a committee be appointed at this time to formulate a "Creed for the English Teachers of Illinois." This creed should indicate in a brief, concise way our beliefs regarding the conditions conducive to good work in the English departments of all high schools. It should be held up as an ideal toward which this association is working. Such a creed if used properly could not help but prove beneficial to boards of education, superintendents, principals and all teachers of English and especially the beginning teachers. I suggest that a creed committee be appointed at this time and that the creed formulated by them be presented for consideration at conference time next year.

Afternoon Session

At the opening of the afternoon session the nominating committee gave its report, which was adopted. The officers elected were: C. H. Woolbert for president; E. C. Baldwin for secretary, and Miss Zada Thornsburgh for treasurer. As members of the executive committee were appointed: H. F. Widger, Miss Essie Chamberlain, and Miss Catherine Himes. As delegates to the forthcoming meeting of the National Council were designated Miss Essie Chamberlain, Miss Jennie Sturgeon, and Mr. A. F. Trams.

Some discussion followed relative to a possible division of the English section. The straw-vote taken clearly indicated a preference for a division on the basis of interest in public-speaking, composition and literature.

The papers presented in the afternoon dealt with the teaching of composition in the small high school. The first was by Miss Emily Wyatt of LaSalle. The paper follows:

Assignments in Composition

Emily Wyatt

Fellow-teachers, I have no revolutionizing theory to give to an eager educational world. It is only out of my experience that I can speak to you. Here then is no intangible, untried theory, but instead—practical, well-tested methods.

What are out objectives in this particular field? We must develop the ability to organize ideas adequately and to express them fluently. *As the school*

term advances, we should be able to see a steady progressive improvement in the students method of attack, in the clarity of his expression. There should be a cumulative strength which speaks of good instruction. In addition to this, in oral themes, we should witness the inspiring spectacle of the loss of hesitation and of self-consciousness. Two different influences have to be met and coped with—*we must give the students the practical,* efficient training in expression which business men demand of their employees; and we must give them the training in self-expression, which will add to the zest for living. Every student of normal ability can be taught to write clearly and efficiently enough to satisfy an exacting employer. Every student should at least be given the chance to stir his latent imagination and to develop his individuality through the happy faculty of self-expression. Our aim then is to enable our students to speak and write both with precision and with personality.

One acute problem of the teacher of composition is that of "What type of subjects shall I use?" Perhaps the text books suggestions have lost their savor; they may not seem within the scope of the child's interest. Of course every teacher should have at hand at least ten or twelve rhetorics from which to draw inspiration. Often the suggested subjects may be slightly changed to apply directly to the interests of the class in question. *Remember we must* that one of the best ways we have of stimulating thought is through the type of subjects we assign. It is through this medium that we may influence the boy and the girl so that they will desire to express their own opinions.

As the tendency of our American youth is too strongly individualistic, can we not through their writing evoke in them a vital interest in the community life? We may work in connection with the civics class as they are doing in the Chicago University High School. We may require stories based on the history of our community or accounts of the early days told by some of the older citizens. We may ask for accounts of the development of influential business firms, of visits to factories, of methods of farming locally used, of farmers' problems of selling. Thus a link between child and community is forged, and the first battle against individualism won.

Another group of subjects which seems very vital to students is that based on school life—the discussion of a class meeting, the account of an interesting chemistry experiment, character sketches of people in school, allowing the students to guess the person delineated. "Lunch Room Types" proved to be a taking topic with my Sophomores this year. Satire of student customs seems always to bring spirited accounts.

The tendency toward literalism which afflicts so large a percentage of our youth may be combatted by stimulating work in composition. When the trend of the times is almost wholly toward the material the effort to stir the unplumbed depths of youthful imagination should prove most salutary. There is an infinity of such subjects—as "A visit to the Bottom of the Sea," "What Would Happen if You Met a Ghost?", "If You Had a Wishing Ring", "Amusements Fifty Years From Now", "Queer Habits of the People of 1922—Looking Back from the Year 2000". The same subjects may be profitably used with older students; if they are asked to write such accounts for grade school children.

A third standard to strive for is a higher level of expression. We all know through bitter experience how flat and savorless are the unaided efforts of our students—never a flicker of humor, never a flash of satire, never a touch of fancy. To gain a taste for these untried virtues a student must have some models. Let him but read some clear bit with its flash of inspiration—and he is all agog to try his hand at the same sort of thing. *I shall treat this subject more concretely* in a different connection.

Now arises the familiar bug-bear—the methods of making the assignment. Perhaps for our last theme, we cudgelled our brains and conjured up a truly inspired subject—only to find the students had failed to understand its radiant possibilities. Something, we say, was wrong with the method of our explanation. A prime requisite in the successful assignment is that the teacher be

honestly enthusiastic about the topics. Here is the reason why no one rhetoric should be the sole fount of our inspiration. We often find ourselves more entertained by subjects of our own choosing than by those of any text—and so are more capable of transferring our enthusiasm. A secret of success is to vary one's methods, so that the student feels a pleasant shock of surprise. At times have the students bring in clippings from magazines, and newspapers, pictures, cartoons that contain the germs of composition ideas. At times assign an outline to be written at home, and the theme to be written in class where the teacher may suggest improvements before the damage is wrought. This method should be used when the assignment is particularly difficult. Once in a while it is good to have the students exchange themes, and correct one another's mistakes. It is easier for them to diagnose the errors of others than those of their own. In the case where *choice of subject is left to the class,* tragedy is avoided by having topics handed in on slips of paper before the labor of writing has begun. Thus impossible subjects are weeded out; unwieldy ones are narrowed to a smaller compass. We must be sure that for such all-embracing topics as "Sports," a section such as "Making a Forward Pass", or "Bob Wins the Game" is substituted. We must get our students to see the superiority of a detailed account of a small incident to vague generalization. "You are convincing", we must tell them, "only when you give a definite, lasting impression."

One vital topic for discussion is the question, "Shall we retain the old method of a theme a week and devote the rest of our time to literature?" I believe no excellent reason may be urged for this hoary practice. It leads to a decided loss of skill in the interval when thought is centered upon literature. There is practically no chance for the development of the topic, but instead it must spring Minerva like—full-grown—from the students brain. The theme is then complete—to tear it to pieces seems sacrilege to its creator. Instead of this method, we should set aside definite periods of the semester for composition work. Then we may hope for cumulative power, and we may work out our projects undisturbed. After a certain level of excellence is reached, it may be retained during the period devoted to literature, if we assign occasional themes largely based on the classics studied.

So strong is our feeling that ability in self-expression is the result of day-to-day growth, that in our school we have one whole semester of the Sophomore year devoted to composition work. It is at this time our students are supposed to gain sufficient skill in the use of clear, concise English to enable them to express themselves adequately in all subsequent written work. I do not mean that this one semester's training is sufficient; but it does give the proper impetus.

No results worth while may be hoped for if the teacher plans her assignments only from day to day. Such improvidence is doomed to disaster. *A general plan* should be made with the rhetoric as a partial guide; and the actual assignments should be laid out in blocks for at least a week in advance. Thus time is given for the development of your projects. Not every day need be theme day; probably two themes a week will be quite sufficient. *Here is a possible plan:*

For Monday you have assigned some work in the rhetoric—perhaps an exercise in sentence structure. You return the themes of the week before and discuss their errors. And it is on Monday that you plan with the class the work for the whole week. You gain suggestions from the cleverer pupils which may start the imagination of the slower ones. You discuss methods of collecting material, whether it be from books, pictures, or experience. Here is your great chance to generate enthusiasm.

For Tuesday—you have assigned a short theme which will be a preparation for Friday's supreme effort. Perhaps it is a character sketch which will fit into Friday's story; perhaps it is a paragraph which will develop one phase of Friday's essay. The class will discuss this preliminary work and give suggestions as to its development.

For Wednesday—you have assigned an outline of Friday's theme. You have several outlines put on the board, for special discussion. Here may be introduced principles of structure with reference to the rhetoric. Thus rhetoric work is motivated.

For Thursday—you return the outlines with constructive suggestions. You discuss the lesson assigned in the rhetoric, making the recitation a preparation for Friday's work.

Then on Friday—the themes are due. They are read, and discussed.

This method is of course only one of many possibilities, but certainly it does involve cumulative power.

The next question is—"What methods shall we use in attacking the different phases of composition?"

Let us first discuss the oral theme. Too often we have made of it a mere labor-saving device for the teacher. Its over-use is as fatal an error as its entire omission. But since we speak so much oftener than we write, practice in oral themes is essential. It also provides a splendid chance for class criticism. If each student sits with pencil in hand and lists both good and bad points made by the speaker, he is certainly gaining the critical faculty. The poised pencil is apt also to stir the speaker to his best efforts. Probably we have felt it to be a drag upon our interest however, to give three consecutive days over to one set of themes. To obviate the danger of third day depression, we may adopt the device of having one-third of the class prepare oral themes, and two-thirds prepare written themes. At this rate in three weeks each student will have spoken one theme and written two. Here is a good chance for the socialized recitation. Put a student in charge of the class who shall direct the criticism.

In the case of book reports, the first requisite is an interesting list. From the Hartford Reading Lists, published by Henry Holt & Co. excellent suggestions may be culled. Enthusiasm for the books is often evoked by the teacher's reading certain passages. Such advertising pays. For Freshmen, and in some cases for upper classes, too, an outline for the report is necessary. I have posted the reading reports arranged by Mr. Heydrick which have brought satisfactory results.

During the Sophomore year enough critical ability should have been gained to make the writing of book-reviews feasible. First discuss the purpose of the professional book reviewer. Show the students where they may find such reviews in the Bookman, The Nation, the New York Times and so on. Read in class two or three good, simple reviews and have the students list the points referred to. These notes are essential as it is from them that the class may take suggestions for their own reports. The virtue of this method is that it calls for definite detailed comments; it does away with the night-mare of good stories badly retold.

Making assignments for written themes is a subject broad enough to tax all our ingenuity. In description we have to guard against work of the purely objective type. The photographer's method of exact reproduction without any expression of personality is not the way of true excellence. Instead we must teach the student to take the subjective point of view of the artist and to reveal his feelings in regard to the person or object described. In all the assignments which illustrate various types of point of view, we should introduce the element of personal feeling. In the case of the fixed point of view, for example, a description of "My House" is infinitely less engaging than that of "My House When I Come Home from School." Such topics as "Mother Making Biscuits," "When I Saw the First Robin", "Why I Like to Look at Pablo", all have possibilities of combining subjective and fixed points of view. Mere objective description calls forth only half of the child's powers. It is when he projects himself into the situation, that the description becomes vivid.

An excellent method of forcing the students to get the dominating idea for a description is through the medium of pictures. I have chosen Van Ostade's "A Peasant at the Window" to show what may be done along this line. Sug-

gestive questions will elicit quick responses. Where are you standing when you make your description? What details make you feel the age of the house? Its poverty? What is the chief idea the artist wants us to get from the picture? What words can you mention which will bring out this idea? Then an interesting change in the point of view may be effected by asking "What is the Peasant Looking At?" Can you put yourself in his place? How does he feel about the things he sees? Perhaps this is the first time the student has ever tried to look at the world with another's eyes—a most engaging experiment.

In studying the essay, it is wise to take modern examples. In actual experience the student will probably write more in the essay style than in any other form. Why then should he imitate Addison and Macaulay excellent as they are? There are so many choice books of modern essays that we may use to stimulate interest. Christopher Morley's "Modern Essays", Max Beerbohm's "And Even Now", Frederick Law's "Modern Essays and Stories" will lend inspiration. The Easy Chair department of the Atlantic Monthly offers much good material. In the Sophomore classes of our school where composition is exclusively taught, we are using Mr. Law's book for the first time this year. The results have been most satisfactory. The selections are excellent, the questions on the text are thought-provoking, the subjects for written imitation are inspiring. Through this medium we study the sentence structure of the various authors we take our material for vocabulary drill, we outline. In the themes written in imitation of the models, we attempt to catch the same tone, the same atmosphere. It is interesting to notice the characteristic sentence structure repeated in a new guise, to find the words of the vocabulary drill used—sometimes to be sure in mangled form. Even if it is impossible to order such a book as Mr. Law's for class use, it should certainly be on every teacher's desk.

I have never found a method of making every child a *poet*—yet interesting poetry may always be written by the greater percentage of the students. Start first with imitations, parodies. As an experimental step the ballad makes an excellent model—its simple form, its direct narrative, appeal strongly. After the study, for example, of the Ancient Mariner, a perfect epidemic of balladesque poetry is apt to result. The heroic couplet also offers the embryo poet an easy outlet for his inspiration. Its definite mechanism, its thought completed within the compass of two lines permit of facile imitation. Blank verse is more difficult, but by the Junior year, after several of Shakespeare's plays have been studied, the ability to get the rhythm without the aid of rhyme, the more sustained thought may be gained.

Narration offers the student fascinating opportunities for which the *short-story* is the ideal medium. *By the Sophomore year,* our students have already had some experience in writing incidents. The effort then is to attempt more sustained narration. First, a few stories of varied types should be studied. This year we shall take those in Mr. Law's book for our models and analyze them thoroughly. *Of course it is impossible to make an assignment* on Monday for a story to be handed in on Tuesday. Two or three weeks are not too long to let the idea simmer. As the first definite step, the student will submit a general plan. It may be a mere incident, a mere character sketch. Plans when submitted to the class call forth active interest. Suggestions come pouring in, so that the tide of enthusiasm rises in even the less adept students. Then comes another period of plot incubation. Character sketches, sketches for local color help to make the story less nebulous. The outline should now be submitted and the teacher can give last suggestions. Then comes the supreme act of writing the master-piece.

Perhaps a few suggestions as to the means of helping the less imaginative pupils may be of value. Let them get hints from newspaper incidents. Collect some clippings yourself which they may read. Discover their chief interest and attempt to get them to build on that. Take a story they have liked, and suggest that they keep the same plot, but that they change the setting. It is interesting to see the complete transformation which may thus be effected. Try a fairy

tale. The release from the necessity for probability may stimulate. All this work should be interspersed with assignments in rhetoric so that definite principles may be digested. By this method we shall encompass several results: imagination is stirred; self-expression is stimulated; and appreciation of the art of others is deepened.

But after all is said, each of us has to work out his or her own salvation. We all know that classes have just as decided personalities as have individuals. The methods which have brought good results for one group may fail with another. Constant adaptations, camelion-like changes to suit our back-ground are essential.

Our constant struggle must be not to let routine submerge us. In our necessarily strenuous work, it is so easy and so fatal to follow the time worn trail. We cannot allow our own enthusiasm to be blunted by monotonous repetition, for we can beget interest, we can stimulate, only when the problem contains zest for us.

The second paper of the afternoon on handling the themes after preparation was presented by Miss L. J. Myers of the University. The paper follows:

Handling Prepared Themes in the Small High School

L. J. Myers

I have been asked to give practical suggestions for handling themes after preparation. The methods which I shall endeavor to explain as directly as possible, are, I believe, all suitable for the small high school. They have been tested in my own experience in the small high school and university; many of them represent inheritances from my own rhetoric instructors; others are the contributions of my colleagues.

I take up the story of the rhetoric problem at a definite point: the student stands outside the classroom door with his completed theme in hand. Have him form the habit of depositing his theme on your desk before he proceeds to his seat, and you will eliminate the chance for eleventh hour revision and copying in class to which the high school student is prone. Should you desire to discuss an exercise in class, it will be easy enough to announce the exception when making the assignment. Now and then for the sake of variety pick up a theme or two quite at haphazard from those just handed in and read to the class. However, such a device should be used rarely; the themes read in class should be chosen carefully and with a definite purpose in mind in each case. But we are anticipating.

The class hour is over; you have carried off the spoils to your den of office or private room. If you think, "Another dull set of themes to correct", if you feel no thrill of anticipation, your assignment has been at fault, your interest in the development of your students as writers is waning, and your fascination in relating their themes to their characters needs to be revived. Already you should have peeped into this theme to see if so-and-so chose the subject in the list which you had devised for her, which side some one else took on the question of informal debate, whether a certain poor student whom you had drilled on the comma fault won the victory over this crude elementary error.

At the risk of repeating poits in the preceding paper, I shall call attention to the three regulations concerning mechanical form which are for your interests primarily: the endorsement, the title, and the margins. Our form of endorsement includes: the name of the course, the name of the student, and the date with the name of the month written in full, on consecutive lines with a uniform margin, placed two inches from the top of the page so that the lengthwise folded edge is at the right hand. Give the rule that all words in the title except

prepositions, articles, and conjunctions should be capitalized, that the title should not be repeated on the second page or succeeding pages, and that the space of one line should be left between the title and the body of the theme. A margin of one and a half inches at the left hand side affords you space for comments and a margin of a half inch at the right safeguards you from cramped illegible handwriting at the edge of the paper. Choose definite rules such as these; have as few as possible; see that the students understand them; and then enforce them on every occasion. If the student does not use the prescribed theme-paper or does not observe margins, demand that he copy the entire theme; if he does not endorse properly, ask him to copy the last page. Penalize each offense and offenses will soon cease. Following detailed instruction is an invaluable habit and should be learned in high school if it has not already been formed.

After you have glanced at endorsement, title, and margins, and made the necessary recommendations, begin the actual correction of grammatical errors, violations of good usage, et cetera. Do not merely underline mistakes, but save yourself time and your students confusion by employing a set of symbols which the students understand, and which they have copied in some permanent place of reference such as the back of their rhetoric texts. Such lists which are to be found in most rhetoric texts should be modified by the individual teacher to answer his own needs. I shall be glad to send my own list to any one sending a stamped self-addressed envelope to me, care of the University.

Employ as many assistants as you have students by asking each student to buy some handbook of composition. The best manual I know is Woolley's Handbook of Composition, revised edition, published by D. C. Heath and Co. To illustrate only a few uses for Wooley—by placing V above a mistake on the student's theme, you send him to a 25-page glossary of faulty expressions; by 162, to a related list of ordinary words which are often misspelled; by 230, to the comma fault; by 62, to the dangling participle; by 99, to remarks on the so-habit; these are but a few paragraphs covering serious and frequent errors. The preventative efficacy of the manual is as great as its curative. Teach the student to use during his preparation the index, table of contents, detailed synopsis of numbered rules, the grammatical vocabulary, and the list of words often mispronounced. The indirect teaching which such a help can accomplish for you will be inestimable. Make the text justify its name by being constantly at hand and in the hand. Cultivate in the student the Woolley habit so that it will become a religious duty to consult the manual on doubtful questions of writing, a habit so engrained that Woolley will remain his help in time of rhetorical trouble even after he has left school.

When correcting a theme, do not note every individual mistake. Of course, certain crude elementary errors should not be allowed to pass at any time; as to others, correlate as much as possible the theory discussed in class with the practice expressed in the actual writing. Focus the assignment on the exemplication of the theory and then mark the theme from that point of view. Apply Benjamin Franklin's principle of weeding out moral faults to the rhetorical field; that is, specialize.

On the vexed subject of grading I shall not enter, but my experience has led me to believe that a fixed standard known to the students is most profitable. Determine on the basis of the minimum essentials of your district or of your own formulation, certain faults which separately or in combination will cause a theme to fail and other faults that will exclude a theme from a grade higher than mere passing. After the students understand such regulations, which may be copied in some permanent place of reference together with the set of symbols, apply these regulations without exception.

Some instructors hold that the rhetoric teacher's function in high school is one of pure correction and not at all one of inspiration. The detailed marking of errors should not for a minute be relaxed; but after all, writing is an expression of personality, crude and inadequate as that expression may seem. Much responsibility, therefore, is bound up in the comment expressing the teach-

er's personal reaction. The high school student is a crafty salesman. You may tell him all you please that his audience consists of his contemporaries in the class but he knows that the teacher signs the pay-checks. One of my students last week told me very frankly that he could write in "two lines," one of which he had discarded because it proved unpopular with his high school teacher. In your comments on the outside of the theme get away from the old formulas, "Interesting", "Clever", "Thoughtful". Stop a moment to register a reaction possible only in the relation of the individual student and the particular theme; your reward will appear in the next themes; they will be what we call "different". Do not limit your reaction to the total effect of the theme. Within the body of the theme remark on individual phrases and ideas. Place above a phrase "Effective", "Original"; above a first-hand description, "Eye on the object" or "I have not noticed this effect"; in the margin opposite an idea "I like this, "And that was another story", "What would you say to ——?" thus introducing to the student's attention a related idea, or "What would Shaw have to say to this?", thus giving you and the student an interesting point of departure for further discussion and thus establishing with a vital and stimulating contact. Tell the student when he has struck his vein, but do not let him exhaust it, for perhaps he has another one as well. Through your remarks so relate the present to the future that the point of departure on the road of improvement will be clear; give to all your comments an unmistakable forward-looking atmosphere.

You return to class with corrected themes as soon as possible in order that the students' interest in the particular assignment may still be fresh. Make the pleasure of hearing themes read rare enough so that it will be a pleasure. All themes that are worthy of the attention of the class should be marked in the upper right hand corner with R. From the themes thus marked choose those which illustrate the definite points you wish to drive home. Vary the procedure; sometimes ask the authors to read their own themes and at others read them yourself. By your earnest and systematic method impress the class with the value of the exercise; beware of giving the impression that you wish merely to fill in time. Frequently when studying models for imitation quoted in the rhetoric text, students are oppressed by the overwhelming difference between these finished specimens and their own feeble achievements. Point out that in the class reading of themes they have the opportunity of listening to the works of writers with their own experience, background, and rhetorical preparation. Also the author gets the definite reaction of these contemporaries of his; furthermore he learns how his work sounds for the first time since many students during the preparation fail to read their work aloud. In time you can train your class to be better critics of the themes of others than writers of their own. Make the students discover the value of the discussion for their own work. Tell them that you have a definite reason for choosing each theme and seek by adroit questioning to lead them to discover that reason. At the close, focus the whole discussion by your own summary.

An exercise which can be made quite valuable if properly directed runs as follows. You have been drilling, let us say, on the method of the sentence outline and have assigned for the day a sentence outline on a simple subject. At the beginning of the hour redistribute the papers so the author and critic are too far apart for communication. Then explain the method to the class. As you give out, one by one, questions testing the application of the theory, tell the student to examine the outline before him and then jot down his conclusions on scratch paper. At the close of the hour give him time to assemble these judgments into a single paragraph of criticism which stresses what he considers essential. Let him understand that he will receive a grade on his criticism. Return the outline together with the criticism to the author who in the light of your questioning and the student criticism, reconsiders his work before the next meeting of the class and makes the necessary alterations. The same method can be applied to the students' criticism of his own work; carried

on in class with the new point of view taken from the teacher's questions there is present the objectivity which makes self-criticism worth while.

My own motto has always been, "One theme carefully and intelligently revised is worth many inadequately or not at all revised". A student may write carefully; you may mark his theme carefully; but if he throws it into the waste-basket there will inevitably be mistakes imperfectly understood. Impress upon the student your inflexiblity in the matter. Record his grade before you return his theme but do not give him credit for it until you have accepted the revision. Demand that themes be returned with the revisions at the next meeting of the class after you have marked them. Go over the revision religiously and keep returning those carelessly or incorrectly revised until the revision is completed satisfactorily. The method which I myself use is a heritage from my undergraduate days, but I found it as admirably adapted to high school composition as to college. Beginning with the top of the first page of the theme the student numbers the mistakes consecutively, placing the number immediately above the mistake. Then on the outside of his theme, beginning below the endorsement, he places his revisions in a straight line down the paper, the numbers corresponding to those within. After he fills that half page he uses the other, and then the back of the next to the outside page in the same manner. Tell him that here generosity is a vice; his revision should include nothing but what is absolutely necessary—a mark of punctuation, a word correctly spelled, a phrase or perhaps an entire sentence reworded. The form should be such that the revision could be inserted without change at its proper place in the body of the theme. After a little practice with this method, you will discover how easily you can hinge the paper on the fold, turning from theme to revision with great facility. Your student will discover that he can not toss the result of your hours of labor into the waste basket nor can he evade the correction of his mistakes by re-writing; he must find out wherein lay the error and the correct method of avoiding it. .

After the revised themes are accepted, keep them in your own possession. You do not need an elaborate filing system. Simply arrange for each section the first themes according to the students' names by alphabetical order; later slip the new themes in place observing hereafter the chronological order for each student. When the group becomes too large for a single rubber band, put a rubber band around the work of each student and tie these in turn into larger groups.

Nothing impresses a student more than to make him feel that you have him tagged. Tell him that very soon you will know his besetting sins and will watch for reformation. After he has committed a crude error several times let him know that you remember it. Exclaim upon the repetition of blunders.

Systematically plan for conferences if you have to give up a class hour or two. Ask the student to meditate beforehand on his pronounced faults, and to be prepared to ask questions. During the conference run through the chronologically arranged themes, emphasizing a point here and a point there; say something tangible of both praise and blame and make some individual recommendation for each student that will show, and truly, that you do know his work and do care for his progress. Convince him of your sincere and abiding conviction that composition, far from being an unpleasant but necessary adjunct to literature, is one of the outlets for expressing individuality, furthermore that it is a means of expression which to a certain degree is possible to every one who cares to pay the price of industry and attention.

The final paper of the session was read by Miss Isabelle Sanders of Ottawa on homogeneous grouping in the English classes. She reported good results from grouping English pupils into three classes according to ability determined by intelligence tests. The paper follows:

Homogeneous Grouping in English Classes

Isabell Sanders

President Harding in his proclamation setting aside the week of December third to ninth as American Education Week, says: "The ideals of democratic government and democratic education were planted simultaneously in our country." Democratic education has not yet reached its full fruition in the maintainence of each student at his highest level of productivity. We wish to consider means whereby that end may be more nearly attained.

In the schools of the country, both elementary and secondary, a heterogenous mass of pupils of approximately the same age has customarily been constituted a section for instruction by one teacher. It has always been realized that, in such a miscellaneous group, the edges were out of focus, as it were, for the teacher, working for the greatest good for the greatest number, has necessarily concentrated her attention on the normal, average children who usually make up about one-half of the class. The children below the average in ability, about a quarter of the class, have received a blurred idea of the discussion, which was beyond their comprehension, and having strained in vain to understand, have lapsed into discouragement and apathy. At the same time, the pupils above the average in ability, who make up the remaining quarter of the class, have become bored and restless listening to a repetition of what they already know, and have also ceased to make any sustained mental effort. Thus, under the name of democracy, the education of the majority at the expense of the minority has continued, deplored by many, yet accepted as the only arrangement possible in a public school system.

The normal, average children, being in the majority, seem to be regarded by the community and by themselves as the ideal, and all variants are forced up or down to that level of mediocrity, which certainly must result in loss both to the individual and to the race from failure to properly develop exceptional talent.

Recently attention has been focused on the range of ability among children of any given chronological age by the mental tests which were used in the U. S. Army during the war, and which have since been given to school children in many parts of the country.

Many educators are pointing out the danger in the use of mental tests to brand a child as a defective, to limit his life prospects, and to deprive him of any hope of advancement beyond the predetermined limits of his innate intelligence.

Individual instruction is one method proposed to make possible the attainment of the ideal of democratic education. The average child can assimilate all that is included in the curriculum of the eight grades of the elementary school if he is placed under a competent tutor from his ninth to his thirteenth year. This method has been considered impractical in the public school because of the expense entailed. At the present time an experiment is in progress; individual instruction is being given in a public school.

A second method of raising the level of productivity is by advancing the gifted children through the school at a more rapid rate, allowing them to "skip grades." This puts the child out of his normal environment, that is places him with children of a higher chronological age who have different interests, differ-

ent games and customs. The precocious child who has been pushed through the grades rapidly goes through life a solitary individual. He may graduate from college at an early age and be ready to enter a gainful occupation at an early age, but one questions whether he is really compensated for his loss of social contacts.

The formation of classes composed of children whose capacity for school work is fairly homogeneous is the third method of attacking the problem. In many schools miscellaneous grouping is being superseded by homogeneous grouping. I shall tell you briefly of our experience with this method in Ottawa.

The Otis Intelligence Test, given to the entering class of the Ottawa Township High School indicated that the mental ages of the children ranged from nine years to eighteen and a half years. This alone is evidence of the lack of standardization in our elementary schools to-day. It also indicates the desirability of classification of pupils.

Academic tests in English and in Arithmetic are given to the entering class each year. The results in English for the last three years have been as follows:

No pupils	1920	Grade
41		0—75
52		75—90
9		90—100
	1921	
119		0—75
29		75—90
6		90—100
	1922	
46		0—75
67		75—90
19		90—100

This year the academic test in English has been taken as the basis for classification of students into groups according to ability.

Since we have a broad elective system in the high school, and since the mathematics sections were formed according to ability indicated in the entering test in arithmetic, it was not possible to place the children of *very* superior mental ability in one group by themselves. To equalize the numbers in the classes, two A sections were formed in which children who made grades of from 85 to 100 were placed, two B sections were formed for those who made grades from 70 to 85, and two C sections for all who failed to make a grade of 70.

The displacement to date is about eleven per cent, that is, one out of each nine children should be in a different section than the one to which his entering test assigned him.

Students are placed in a section, with the understanding that they have not been branded for life as an individual of inferior, medium or superior capacity by the test, but that the classification is temporary and that their future grades depend entirely upon their own achievements. This announcement furnishes an incentive, and supplies the stimulus of competition. The A student must prove his right to remain in the A section. The B student may enter the A section the second semester if he does A work this semester. The C student may rise to the B section or even to the A section if he brings his work to that level.

All sections cover the same course, as the Freshmen are all to take a course in American literature given to mixed sections Sophomore year.

The absolute marking system is used, each student is graded according to his position in the entire class, not in his particular section.

The work of each student is graded by a composition scale (Nassau County Supplement to the Hillegas Scale) and the results so obtained will be considered with the grades given by the teacher, in determining the classification for the second semester.

An article in the current number of the Teachers College Record by Thomas H. Briggs, Professor of Education, Teachers College, calls attention to the fact that there is something seriously wrong with the teaching of English Composition in our high schools. Facts gathered from high schools throughout the country indicate that there is no uniformity in requirements for accomplishment in English Composition in the freshman year. Prof. Briggs says, "When in a typical class the range between barely passing, and the best work averages 2.2 points, a difference greater than may be expected between a pupil's work in the ninth and in the twelfth grades, the difficulties of the teacher in giving instruction suitable for all may easily be imagined." All teachers who are interested in the use of English Composition scales will find this article of great practical value.

The work in the A sections differs from that done in the other sections in quality rather than in quantity. The course is enriched by collateral reading, free discussion, dramatization of books read, map drawing and illustrating and presentation of individual reports.

No attempt is made to push the superior students ahead, and they are not kept under any unnatural strain. In order to secure an equal effort from each pupil in each section, the assignments in Freshman English are made on a time basis; each student is expected to spend one hour each day in preparation.

In a miscellaneous group the student has been graded on his natural ability instead of upon the effort which he put forth. It has been customary to give an A grade to a superior student for doing less work than a C student is required to do in order to secure a grade of barely passing. The A student is commended for work which he himself knows is far inferior to the best of which he is capable, but having received the highest grade, no incentive remains for him to do more. This encourages him in idleness.

In an A section the student is forced to earn his A grade by putting forth his best effort since the standard of work is higher than in the miscellaneous group. Children are seldom lazy if the work is interesting, but many of them dislike routine and are stimulated by a varied program. The superior student is doing more intensive work than his class-mates, but he is not required to work harder than they. He is given no extra credit, but his reward lies in the satisfaction of attacking harder and more interesting problems, in freedom of discussion, and in keener competition.

The B section differs less from the mixed section in the quality of its work than do either the A or the C section. It progresses a little more rapidly without the lagging C students. In place of the A students, it raises up leaders of its own who would never have reached the top in the mixed section.

The great majority of the children in our C sections are healthy, pleasing children of American parentage. They are less energetic, and much less imaginative than the children in the other sections. They seem unable to concentrate for so long a period. They take too little joy in mental activity, but rather have an aversion to all mental effort. Their mentality seems geared in low. They are the children who, after frequent failures in a mixed section, drop out of school. One advantage of homogeneous grouping is that fewer pupils drop out because more individual attention is given to the work of each. The lowest of the C's present a problem which does not logically belong to the high school.

Homogeneous grouping is criticized most frequently on the ground that it causes the inferior student to feel his inferiority more keenly. We have not found this to be true. In the mixed section the dull child fails regularly and

persistently. He is constantly corrected. He hears the bright student continually give the right answer, apparently without effort. Thus the great difference between his own achievement and that of his fellow student confronts him day after day to his utter hopelessness and discouragement.

In a C section, most of his class-mates make mistakes. He doesn't feel that he is the only failure. He is less self-conscious and volunteers more freely than he would in a mixed section, and he recites more frequently. The work is easier, and the discussion is adapted to his understanding.

While the C section follows the regular Freshman English course, the work is adapted to the needs of backward students, the emphasis is placed on the fundamental rules of grammar. There is drill on parts of speech, on spelling, and on punctuation. Some students have never received sufficient instruction in English grammar in the elementary school, and they have gone out of our Repair English class (which preceded the present classification system) and have thereafter done B work in English.

Many have pitied the teacher of the C section. With a sympathetic teacher the C section is very happy, and self-sufficient. However if she has an A, a B and a C section, she finds the work with these pupils much more interesting and satisfactory than it could be with the same pupils arranged in three mixed sections.

Homogeneous grouping seems to me to bring the democratic ideal of education closer than miscellaneous grouping ever has done, since it gives a more nearly equal opportunity to each student, and so raises the general level of intelligence.

It was very unfortunate that the sessions were held this year where the inadequate heating, or rather the total lack of heating made conditions so uncomfortable as to preclude discussion. Never have the papers been more worth while, or more provocative of discussion, but after sitting for two hours in a temperature that made our teeth chatter, we voted merely as a measure of self preservation to adjourn at 4 o'clock.

E. C. Baldwin, *Secretary.*

8. GEOGRAPHY SECTION

The Geography Section of the High School Conference met in Room 247 at 9 a. m., Nov. 24, with Miss A. Hanson presiding. Miss Hanson, in a few well chosen sentences, discussed the future work of the conference and suggested that the following lines of work might be taken up: Investigation of Methods of Teaching Geography; Study of the Relation of History and Geography; Development of Economic Geography; Geography from the Physical and Human Standpoints. The first address was made by Mr. F. W. DeWolf, Director of the State Geological Survey, upon the topic, "The Mineral Industries of Illinois." Mr. DeWolf is probably the best informed man in the state upon the condition and status of the mineral industry and his very interesting address which was illustrated by lantern slides is given below.

Abstract of Address by F. W. DeWolf, Chief, State Geological Survey

The State of Illinois is underlain by stratified beds of sandstone, shale, and limestone, with minor amounts of coal and other mineral substances. These were originally laid down under the sea for the most part, and may be classified on the basis of contained fossils.

The rock formations no longer lie horizontal but have been slightly warped until the State as a whole now comprises a spoon-shaped basin with a tip in northwestern Illinois and the bowl in southeastern counties. Toward this basin the rocks dip from all the borders of the "spoon"; thus a coal bed occurring at the surface near Belleville in western Illinois is found 1,000 feet deep in the vicinity of Olney in south-central Illinois. From this position it rises eastward into Indiana.

This basin structure thus controls the surface occurrence of coals, limestones, and other minerals of economic importance.

Coal investigations of the Survey during the past 10 years have resulted in a series of unit reports covering various districts. These present the facts regarding the occurrence, extent, thickness, and chemical character of each of the more important coal beds. Reports are also accompanied by structural maps showing the dips of the coal beds and these maps have supplementary value as a guide to oil prospecting. The quality of the various Illinois coals is shown in a Survey bulletin of analyses and by graphic charts.

The oil fields of Illinois occur in places where the basin has minor warpings or wrinkles so as to cause domes or anticlinal folds. The main field in southeastern Illinois still produces 10,000,000 barrels per year, although it is 17 years old. The yield per well, however, is now small and commercial operation is possible only where a number of wells can be pumped from a single power plant and by a single field man. Smaller fields, located in central and western Illinois, similarly occur on rock folds. The work of the geologists, therefore, in search for new oil fields is to find places where rocks are folded upward and other conditions thought to be favorable. As a result of such work five of the Illinois fields have been recommended in advance by the State Survey.

The limestone formations available for road material are found in the border counties surrounding the coal field, extending from northeastern Illinois to the Mississippi River and thence south along the river counties and east to the Ohio in Hardin County. Within this region there are already dozens of quarries, but the Survey has discovered many additional places where commercial quarries can be opened up to advantage.

Similarly, an investigation of sand and gravel possibilities reveals a number of localities in northeastern Illinois where glacial deposits or stream deposits closely associated with the position of former glaciers may be opened up with profit.

Other mineral resources of Illinois deserving mention and covered in reports and maps of the Geological Survey are as follows: fluorspar, lead and zinc, clays, silica, glass sand, and underground water.

A list of publications will be sent on request.

Two other speakers gave first hand accounts of the geography of two type communities in Illinois. The following papers illustrate a beginning of a new kind of work by the Geography section, the collection of materials on the geography of Illinois. The papers given below show how interesting and important such work may become; "The Geography of the Orchard Industry of Southern Illinois", by Professor Frank H. Colyer of the Southern State Teachers' College

at Carbondale, Illinois, and "The Geography of the Benton Community", by Miss Ruth Ernest, teacher of geography in the Benton Township High School.

The Orchard Industry in the Illinois Ozarks

Frank H. Colyer, Carbondale

There are two quite distinct commercial orchard sections in southern Illinois. One in the Ozarks near the extreme southern part of the state, and the other some seventy or eighty miles farther north. These northern orchards are chiefly in the counties of Marion, Clay and Richland, while the Ozark orchards are chiefly in the counties of Union and Johnson.

Since these two orchard sections are quite different in their geographical setting, it is thought best to confine this discussion to the commercial orchard industry of the Illinois Ozarks.

Controlling Factors in Location of Ozark Orchards

By reference to the relief map of Illinois it will be seen that the Illinois Ozarks are but an eastward extension, or spur, of the Ozarks of Missouri. This Ozark Range, as it is sometimes spoken of, extends entirely across southern Illinois, and is chiefly in the counties of Union, Johnson, Pope and Hardin, although it also includes the southern part of Jackson, Williamson, Saline, and Gallatin counties.

There are at least three distinct factors that have had much to do in the location of the commercial orchards of the Ozarks. First is the surface, second the railroads, and third climate. There are other factors, such as soils, ground water drainage, and the enterprise and foresight of the orchardist, but certainly the three first named are most important.

The largest commercial orchard centers are Cobden, Alto Pass, Anna, Ozark, and New Burnside, with smaller centers at Pomona, Makanda, Parker, Tunnel Hill, and Goreville. From the outline map it will be seen that all of these orchard centers are not merely in the Ozarks but quite near the very crest. Alto Pass, South Pass (now Cobden), Tunnel Hill and the town of Ozark, as their names suggest, are on the divide of the Ozark Ridge.

That the railroads have had much to do with the location of the commercial orchards can be clearly seen from the map showing the railroads that cross the Ozarks. The first commercial orchards were not merely in the higher parts of the Ozarks; but were near Cobden, on the Illinois Central railroad. This was the first railroad to cross the Ozarks, and the first commercial orchards were planted in 1854, the year the Illinois Central railroad was completed. Perhaps no better illustration of the influence of the railroads can be given than to again refer to the map and note that while the counties of Pope and Hardin are more completely in the Ozark Ridge than Union and Johnson, and have just as good orchard lands, yet they have practically no commercial orchards. This is due to the fact that the two counties of Pope and Hardin do not have any railroads crossing the crest of the Ozarks, thus affording an opportunity for quick and regular transportation to northern markets.

The experienced orchardist feels that temperature has more to do in determining whether he will have an abundant fruit crop, or almost a failure, than any other thing connected with the orchard industry. It is not the winter cold, either to the tree or the fruit buds, that is dreaded most but the late spring frosts which in one night may change a good fruit prospect into an almost complete failure. It is true that occasional low winter temperatures have injured the peach trees and killed most all of the peach buds; but this

is only once in a number of years and never injuring the apples in the southern Illinois orchards. The spring freeze is ever a dreaded possibility, particularly in reference to the peach crop.

It is chiefly to escape these frosts that the commercial orchards are largely located near the crest of the Ozarks, where they will have the benefits of better frost drainage. Owing to the absence of high mountains to the north of the Mississippi basin, cold waves in late spring may bring freezing temperatures almost or quite to the Gulf of Mexico.

It is on clear still nights when these cold waves spread far to the south, that the coldest air settles in the valleys and there may be several degrees difference in temperature on the higher ridges than in the deep near by valleys of the Ozarks. If the temperatures are not too low, the higher ridges may escape killing frosts while in the valleys all the fruit may be killed. The writer has observed two apple orchards, side by side, yet one orchard was some twenty or thirty feet higher than the other. The freezing in the lower orchard almost completely killed the young apples, while on the higher ground there was a good crop of apples that season. Another instance of frost drainage is in a peach orchard partly on a ridge and partly extending well down the slopes of this ridge. The fruit on the trees on the lower slopes was entirely killed, higher on the slope the upper parts of the trees had plenty of peaches, while on the lower limbs all the fruit was killed, yet the trees on the top of the ridge had a crop, both on the lower and upper limbs. Many similar instances could be mentioned.

It must not be inferred that the ridges always escape spring freezes. If the temperatures are on the ridges, as well as in the valleys, but when the valleys have temperatures as low as 26 degrees or 28 degrees, the fruit will be killed on the ridges, as well as in the valleys, but when the valleys have temperatures as low as 26 degrees or 28 degrees the ridges may have a temperature but little, if any lower, than the freezing point, consequently will escape frost injury.

There is also but little doubt that better ground water drainage, better light and perhaps a better kind of soil for fruits are more frequently found on the ridges. All of these factors combined favor the higher ridges of the Ozarks for the location of the commercial orchards.

History of Fruit Growing in Illinois Ozarks

Fruit growing in the Ozarks of southern Illinois has two well marked periods of growth and one of decline. The first extending from 1854 to about 1870 or 1875. This was followed by a period of rather sharp decline. Then finally a gradual revival during the last fifteen or twenty years.

Early Period of Rapid Growth

The first commercial orchards were planted near South Pass (now Cobden) in the year 1853-1854. It will be remembered that this was the year of the building and completion of the Illinois Central railroad. After the completion of this railroad the orchards increased in size and number quite rapidly, particularly from 1860 to 1865, when there was a rather large influx of orchardists from other sections of the country.

The first shipment of peaches to Chicago began about 1858. At first these shipments were on a small scale, as the orchards were young. By 1866 however, the apple as well as the peach orchards were old and extensive enough to furnish large amounts of fruit, and shipments had become so large that a fruit train was put on the Illinois Central railroad. This fruit train was perhaps the first of its kind in Illinois and among the first in the entire United States. Earlier than 1866 the shipments were largely by carload lots, and the cars were attached to fast passenger trains. After 1866 the fruit train was a regular means

of shipment at the height of the season. By 1870 to 1875 the orchard industry, in this first period, reached its climax and was of considerable importance. For it is said that in its palmy days and at the height of the shipping season there were from twenty five to thirty five car loads of fruit per day shipped from Cobden alone. In this early day the fruit industry was chiefly confined to Union County. Alto Pass, New Burnsides, Ozark, Tunnel Hill were not fruit centers in this first period because railroads had then not been built through these sections of the Ozarks.

In this early period of the fruit industry several changes in fruit raising should be mentioned. Up till 1854 almost every farm had its small orchard for home consumption and the fruits were nearly all of the seedling varieties, but the planting of commercial orchards in 1854, demanded better fruits of the budded and grafted kinds. So as early as 1857 nurseries were started consisting almost entirely of budded and grafted fruits. At one time there were as many as four or five nurseries in Union county. The shipment of fruits and vegetables also demanded crates, hampers, boxes and barrels in which to ship the fruits and vegetables. Union county being a timbered country met the demand by the establishment of factories for the making of barrels, boxes, hampers and crates. This industry thus begun, still persists in the Ozark section. The leading centers of manufacture, however, have shifted to the Ohio and Mississippi river towns because of their superior advantages in getting logs from which barrels, crates, hampers, etc. are made.

Decline of Orchard Fruit and Rise of Small Fruits and Vegetable Industry

About 1875 several changes in the fruit industry were taking place, the combined effects of which caused a sharp decline in the production of orchard fruits. About 1870 there were an unusual number of late spring freezes that killed many of the peaches, with years intervening of equally heavy fruit yields. At that time the Chicago and other northern markets were much easier glutted than they are now, and during these years of heavy yields the shipment of a fruit train each day for several days in succession glutted these northern markets. At such times fruit could hardly be sold for enough to pay for transportation. To these two discouraging conditions was added the rapid increase in the orchard pests, both of the trees and the fruit. To the casual reader it is a little surprising to read that "The woolyaphis, the bark louse, the peach tree borer, the canker worm, the caterpillar, the coddling moth, the rot and the blight" had become so serious as to threaten the existence of the orchard industry. About the only orchard pest of today, not mentioned in this list, is the San Jose scale. While some of the modern means of fighting orchard pests were then known, still as a whole the combat was far from a success in many instances. Thus the combined influence of these discouraging conditions caused some growers to cut down their orchards while others ceased to cultivate and spray. Perhaps the larger number turned their attention to the growing of small fruits, such as the strawberry, the raspberry and the blackberry. Still other orchardists began the growing of vegetables for the northern markets. The leading vegetables were the asparagus, rhubarb, tomato and sweet potato. To these leading kinds should be added green onions, radishes, peas and beans.

It is not to be thought, however, that this is the date of the beginning of the culture of small fruits and vegetables, for their production was begun soon after the starting of the orchard fruit industry. What the decline of the orchard fruits really meant was to give added vigor to small fruits and vegetables and to make them the leaders for a time.

About 1870 or 1875 southern Illinois was the source from which Chicago and other northern Mississippi basin cities got their first vegetables and fruits. At that time railroad building in the South was in its early stage of development and through trains from the Gulf to the cities of the Great Lakes were

not run. The early market for fruits and vegetables was a profitable one and was more attractive than at a later date. When railroads were built from the North to the Gulf States, and the refrigerator cars began to be used the grower of small fruits and vegetables in southern Illinois, in turn began to meet southern competition and a decline in their production set in. This decline was gradual and today southern Illinois has become simply one in a chain of distinct producing sections extending from the tropics to the larger cities of northern United States and southern Canada in furnishing strawberries and early vegetables to the northern markets. In the case of the orchard fruits, particularly the apple, this is not true. Arkansas, southern Missouri and southern Illinois are about the earliest apples as yet to reach the northern cities.

While the small fruit and vegetable industry of this southern section has declined it must not be thought of as of no consequence for even in this year of 1922 there were 123 car loads of cantaloupe, 163 car loads of strawberries and 486 cars of vegetables. These shipments are confined to southern Illinois towns south of Carbondale.

The Orchard Fruit Industry From 1900 to 1922

Since the opening of the present century the orchard fruit industry of the Ozarks has had its second period of growth. This period of revival has been more gradual than the earlier period and gives evidence of being more permanent.

The causes that have contributed to this revival are several. The first and perhaps the one that gives the greatest promise of permanence is the rapid growth of city populations in all parts of the United States. This large city population is and will certainly continue to demand a larger amount of fruit to supply its needs.

A second cause of the revival of the orchard fruit industry is the highly specialized and scientific character of the modern orchard fruit industry. The fighting of insect pests and fungus diseases alone require a special training that the average farmer raising grain, stock and fruits all on one farm, does not possess. The pruning of trees also requires special training. The profitable orchard of today requires special knowledge of fertilization and cultivation. More and more it becomes evident that greater attention must be given to the picking of fruit at the right time and grading and packing the fruit to meet the more exacting demands of large city markets. To these must be added the demand of some kind of organization that is in constant touch with the markets to know where, when and how to market the fruit. But how is this a cause of revival of the orchard fruit industry? It is only a few years ago that almost every farm in southern Illinois had its local orchard for home use and perhaps a small surplus for the nearby town market. Today there are many farms without its home orchard, or if the farm has an orchard, it is an old one that shows quite plainly the ravages of the insect pests and fungus diseases. The average mixed farmer either feels that the successful growing of orchard fruits requires a special training he does not possess, or that it will not pay to give the home orchard the attention that it needs to make it a success. If present tendencies continue it seems the home orchard is doomed in the case of most farmers. This means that the trained orchardist is having a larger local demand than in times past.

There are perhaps other causes that have contributed to this revival of the orchard fruit industry, but they are less permanent in character. The high prices of everything during the closing period of the World War and immediately thereafter stimulated the fruit industry as it did many others.

Perhaps the best way to give some idea of the present importance of the orchard fruit industry of the Illinois Ozarks is to give the fruit shipments for the present season of 1922. Figures gathered from the files of the different railroads that pass through these orchard sections show that 910 cars of apples,

781 cars of peaches and 125 cars of pears were shipped from the Ozark orchards. This makes a total of 1816 car loads of fruits that were shipped from the Ozark orchards in 1922. These figures however, do not correctly express the true production or shipment of fruits. The high freight and express rates, the low price of fruit in many city markets and the much greater efficiency of the auto-truck as a means of transportation have all contributed to the marketing of much fruit by auto-truck. To these must be added the rapid growth of towns in the coal regions just to the north of the Ozarks. Many of these coal towns that now have a population of from 5000 to 10,000 people, were a few years ago either not in existence or were small county seat towns of less than two thousand population. Just how much fruit was marketed in a radius of 50 or 60 miles of the Ozark orchards by auto-trucks is difficult even to estimate. The careful observer, however, who saw the great number of loads marketed by auto-truck knows the amount was not small. One fruit grower said that he sold 4500 bushels of peaches and 1800 bushels of these were shipped to the consumer by auto-truck. Other small growers shipped nearly all their peaches by auto-truck. Many of the larger growers, however, shipped nearly all their fruit by car load lots. It is safe to say that well over one million bushels of fruit were shipped from the Ozark orchards during the season of 1922.

As good roads increase in mileage and the coal towns of southern Illinois grow in population, it is likely that the auto-truck will greatly extend its radius of operation and a constantly increasing amount of fruit will be marketed in southern Illinois towns by auto-truck.

The Benton Community
Ruth Ernest, Benton

Benton is in the central part of Franklin County three hundred miles south of Chicago and ninety miles east of St. Louis. Southern Illinois was the first portion of the State to be settled and the first settlement of Franklin County dates back to 1804 when John and William Browning, Joseph Estes, three brothers named Jordan, and William Barbrey took up their abode. They built a fort two miles S. E. of what is now Thompsonville. This fort was necessary as the Indians were hostile and had finished a tribal war just a short time before. The two warring tribes were the Kaskaskias and Shawnees and the former had been exterminated. The outlines of defenses used by the Indians are still recognized. The fort was occupied until 1812 and at intervals until 1817.

Now in December, 1817, a petition was made in the Territorial House of Representatives for the creation of a county to be named Franklin. This became a political unit in January, 1818, before the State was organized and was much larger in area than the present county as it contained 870 square miles .A division of this county came in 1839 and the present Williamson and Franklin Counties were formed. The county seat of the original county was Old Frankfort, which is the same as Frankfort Heights now, but when the division was made a new location was chosen by a committee. The site selected was on a level, fairly well drained area (known as Rawling Prairie) between the Big Muddy and Middle Fork. Its location has been described as "on a prairie at the edge of a woods." Twenty acres of land was donated by the land owners and Benton became a town in 1841.

The names of Browning, Swofford, Ewing and McCreery were well known in the early days of this village. The merchants hauled all their goods from St. Louis, a distance of about a hundred miles, generally with ox teams. The journey required nearly two weeks. The first bridge of this county was constructed in 1838 over the Big Muddy on the St. Louis and Frankfort road. A hack line or Star route mail line was early established from Shawneetown via Benton to St. Louis probably in 1845. Four days were required to get a com-

munication to St. Louis. The first steam mill was built on Pope's Prairie in 1854. The court house built in 1845 at the cost of three thousand dollars was one of the first brick buildings in the county. The present court house, built in 1875, is a historic structure. The business interests of the town are located around this court house square.

The Franklin County of today consists of 430 square miles. It is in the 4th tier of counties from the southern boundaries. The agricultural products particularly adapted on account of climate, soil and market conditions are vegetables, fruit, and poultry. Coal is one of the most important resources of Southern Illinois, but it is only in the last twenty years that coal mining has become its most important industry. There are about forty counties in Southern Illinois or Egypt and about thirty of these counties are underlaid with coal. The coal measures are designated by number, the numbering beginning with the deepest measure. There are seven known seams or strata in the state and three of them are now being worked in Southern Illinois. The most important seams are Nos. 5 and 6. There are seven counties in which No. 6 is now being worked: Marion, Clinton, St. Clair, Perry, Randolph, Jackson, Williamson and Franklin.

"District No. 6 occupies nearly all of thirty-six townships in Williamson, Franklin and Jefferson Counties. The area is rectangular in shape and lies in the south central part of the state. Because of its importance as a coal field the area is served by numerous railroads such as: I. C., C. & E. I., L. & N., and the C. B. & Q. Mt. Vernon in Jefferson County, Benton and Johnson City in Williamson County are among the largest cities. Marion, the county seat of Williamson County, is located about a mile south of the outcrop of coal No. 6. Except for the north-east part of Franklin and eastern part of Jefferson County the area lies in the drainage basin of the Big Muddy River; the rest of the district is drained by tributaries of the Saline River. Below an elevation of 520 feet above sea level the streams are bordered by wide plains believed to represent the floor of broad lake-like expanses of water known as Lake Muddy, which extended up valleys in Southern Illinois and which are due to the silting up of the Mississippi in one of the later epochs of the glacial period. About these lakes flats at an elevation of about 600 feet above sea level is the till plain formed in the Illinoisian stage of the glacial period. The continuity of this plain is interrupted by numerous valleys and occasional hills, commonly only thinly covered with glacial drift, which rise to an elevation rarely exceeding 700 feet above sea level. The Illinoisian till plain terminates at the southern border of the district at the outcrop of coal No. 6 and the overlying limestone."

Seam No. 6 is in the western and the southern part of the state. There is an anticline with a north-south axis at Duquoin which misled people until recently as they thought the Sputh coal field to be a different seam from the west-north. Now the Williamson and Franklin County field is, as I previously intimated, the most important in the state. The coal dips from the N. E. of Franklin County where it is nearly one thousand feet from the surface to the S. W. where it is overlain with one hundred feet of soil and rock. It dips at the rate of 20-25 feet per mile. This more important vein of coal is the No. 6 seam and its average thickness is 9 feet while it ranges from 8 to 12 feet. It is overlain by a shale roof of such nature that a portion of the coal is left up for a roof. The shale is a brown and white rock and contains many fossils. There are several faults in the county. Southeast of Benton there is one that appears to be the result of wash at an early date. The coal is not present for a ways and then the regular seam is found. The other faults are found in following a coal seam. The miners are confronted by a solid rock wall instead of coal. The displacement may be as much as twenty feet. These are few and their location well marked.

Seam No. 5 is four or five feet in thickness and varies in distance from forty to eighty feet below No. 6. This distance doesn't vary although the dis-

tance to the surface may. Seam No. 5 isn't as important now in Franklin County as it will be after seam No. 6 is worked out. It is estimated that these seams will last for one hundred and fifty or two hundred years. When one stops to think that twenty years ago Southern Illinois was practically unknown, and that drilling for coal was given up in despair in 1892, when the drillers were within fifty feet of discovering a real Eldorado for this country; then one begins to realize the problems before these communities. It was about 1900 that Joseph Leiter of Chicago bought eight thousand acres of land in Franklin County and to him belongs the credit of opening up this vast wealth of Illinois. He established the town of Zeigler, which is named after his father. The coal produced in this county was less than five thousand tons in 1904. Now there are twenty-seven mines in the county with an annual output of over fifteen million tons and a payroll of over thirty million dollars.

The big mines of the county are Orient No. 1, six miles from Benton, Old Ben, Mines No. 8 and 9 near Frankfort and Zeigler. There are fifteen thousand miners in Franklin County. Williamsson County has seventy-five mines and runs second in production of coal. Orient is the largest coal mine in the world. It holds the hoisting record of over eight thousand tons in eight hours. A second mine, Orient No. 2 just opened last week will probably be larger in a few years. There are thirty men working now as they can only use a few until the seam is developed quite a ways from the air shaft. There is something like two and one-half millions of dollars invested in No. 2 and when it gets to its working capacity in a year or two there will be twelve hundred men underground. That doesn't count surface men. Orient No. 2 is north and west of Frankfort and the land leased extends toward Benton on the south and up to the Hart-Williams or Benton No. 2 and Benton No. 1 lease. Another large mine at Pershing just opening only uses sixty men. The coal mined daily in Franklin County would make a train load fifteen miles long. In one year this train would stretch across the continent. A small area south of Benton at present is unworked, but will soon be opened by Orient No. 2. Most of the unworked land is north of Benton, but the U. S. Steel Corporation has leased this and in time will open this field. This same Company works the Middle Fork Mine. The latest machinery is found in these mines although they have been worked so short a time. They are operated and lighted through by electricity.

Now after the opening of the mines at Benton, which make use of 600 men at Franklin County Mine; 800 men at Middle Fork; and 450 men at Old Mine; you can see the general effect on a community. The housing was inadequate, the business district far too small, the schools not ready to care for a third or half of the children, taxes very high, the railroads needing to wake up and build many more miles of track.

Franklin County is the only county east of the Mississippi River in the Federal Census report that more than doubled its population. From 1910 to 1920 it increased 126.4%. What happened at Benton is true of all other towns. Prior to 1900 there wasn't a town in the county with a population of twenty-five hundred and now there are several. Christopher, from where the Columbus coal is mined, has a record as follows: 1900 population 500; 1910 population 1825, and 1920 population 75001.

The former inhabitants of the county were descendants of immigrants from Tennessee and Kentucky, but now every nation is represented. The Poles, Lithuanians, Bulgarians, Italians and Russians predominate. The social and economic problems are great. Figuratively speaking a town wakes up a young city the next morning after a coal mine has been located. One local man said, "Southern Illinois should be called the Coal Bucket of the Nation," and Franklin County could be called "Carbon Square."

In the business session at the close, Dr. W. O. Blanchard, of the Department of Geography in the University was elected member of the executive committee, and was also chosen its chairman.

A motion was passed to attempt the collection and distribution of geographical material of the Geography of Illinois. In this work the plan is to try to secure the services of Geography teachers in different parts of the state who are willing to collect and organize the geographical material of their respective communities. After a discussion in which almost all present participated, it was decided to carry on this work and Mr. F. W. Cox of the University was appointed chairman of the committee, to put the plan into execution.

F. W. Cox, *Secretary.*

9. HIGH SCHOOL LIBRARY SECTION

The High School Library Section was called to order at 9 o'clock, November 24th, in Room 210, University High School, Miss Hannah Logasa of Chicago presiding.

After a few necessary preliminary announcements and the appointing of a committee to take care of the vacancies in the Conference Committee, the regular program was taken up.

Mr. Reavis, University of Chicago, opened the program, speaking on the subject. **"The Library and High School Administration."** Following is the substance of his address:

"It is not unusual to find that no adequate provisions have been made for the library in high school buildings of comparatively recent construction. This oversight might be partly overlooked, if it were not for the fact that the place of the library in the modern secondary school has been so thoroughly justified. The fault can not be charged solely to the Board of Education and school architect. It rests primarily on the teachers who are satisfied to work without adequate reference and supplementary materials, and the administrative officers content with static schools.

Every progressive administrative officer knows that it is impossible properly to administer a secondary school without a good library. It should be the universal laboratory of the school where the opportunity is provided for the student to develop his intellectual life through contact with the world of books which cannot be had in the various class rooms. It can contribute something to the student which the rest of the school cannot give.

The library if properly equipped and organized will greatly reduce the problems of discipline and detention in the high school. It offers purposeful activity in class work, and thus forestalls many of the most aggravating problems with which many administrative officers have to deal. Through the agency of the library industry supplants idleness, and worthwhile intellectual activity supersedes enforced detention in artificial study halls.

It is possible to develop a high intellectual tone in the school and to hand it down as a tradition to incoming students through a useful library. But to accomplish this, the library must be more than a reference-book room. It must be given a definite function in the school, and must render a real service to the pupil. It must be a workshop where students can find an abundance of materials, and must assume a responsibility for training them to become independent in the use of such materials.

It is idle to expect great results from the library unless its physical equipment, materials, and administration are modern and up-to-date. The librarian should not be a novice. She should be a trained librarian, teacher, and personnel officer combined. Of course, this kind of library will cost in proportion to the other activities of the school, but it likewise offers value received not only in the successful administration of the school but also in the proper education of the individual students.

Next Mr. Windsor of the University of Illinois gave in brief the need of a definite school library policy in this state and suggested the adoption of the same resolution in this regard as was adopted by the Illinois Library Association at their meeting this fall. The resolution, which reads as follows, was adopted unanimously:

Resolved, that the office of Supervisor of School Libraries in the state of Illinois shall be created. The person holding the office shall have professional library training and shall have had recognized experience in library work. The Supervisor of School Libraries shall be appointed by the Superintendent of Public Instruction, and shall be a member of his department, with salary and rank co-ordinate with those of other Supervisors of the same department.

The Supervisor of School Libraries shall have authority to make studies and investigations relating to school library conditions in Elementary and Secondary schools of the state; he shall act in advisory capacity to the local officials of any Elementary or Secondary school in the state desiring advice on library matters; he shall prepare lists of books, outline courses of instruction in the use of books and libraries for pupils and teachers; he shall make an annual report of the work of his office to the Superintendent of Public Instruction; he shall make constructive suggestions and recommendations based on his studies and investigations, looking toward the improvement and standardization of the school libraries of the state.

The second paper, **"Training High School Pupils for Leisure"**, was presented by Miss Rachel Baldwin, Highland Park. Her paper follows:

About a year ago there appeared in the Atlantic Monthly a most arresting article, the first of Arthur Pound's series on the Iron Man. Doubtless you all remember how convincingly he developed the thesis that, since automatic machinery has so greatly increased the speed of production, it has made a shorter working day, thus giving the working man hours of leisure undreamed of by his forefathers. Also, by confining him to one automatic process, modern industry has made it impossible for the worker to grow mentally through his work, and it is only in his leisure time that he can really live. It is therefore the task of society, and especially of education to fit him to use that leisure constructively and not destructively.

After reading that article I said to one of our English teachers: "Here is where you and I come in."

We in the schools have the boys and girls under our influence during the most impressionable period of their lives, and it is our place to stir their spirits

and awaken their minds to the best in literature and art and life; in short, we can give them resources, and a person with resources can always use leisure. If we begin at once by teaching them good reading habits, they will not waste their spare time in school, nor fritter away aimlessly their long vacations; and the love of reading will carry over into their adult life. They will turn to the public library and find there books to suit every mood and fill every idle hour with joy. The more joy-reading, the less joy-riding. Which of the two works more toward the "durable satisfactions of life"?

We live in a materialistic age, and "education for efficiency" has long been our slogan. Young America, too, responds more readily to practical stimuli than to any other. As the little East Side boy in New York said: "Yes, I like to go to school. School makes me smart, and then I can get a good job."

But one of the leading librarians of the country has recently said that it is a finer thing to "grasp the man in the street by the soul and lift him into contact with other souls—to send him to Hell with Dante, or with Wordsworth to contemplate the intimations of immortality" than to teach him how to raise more chickens or sell more automobiles.

That is certainly very true; but we, like Martha, are "cumbered with much serving." How shall a high school librarian handle the constant rush of reference work, the thousand details of administration, respond to the endless demands that fill her days, and still save a margin of her time and strength for that inspirational work that is the most worth while of all?

As to methods, the chairman of this meeting could formulate them far better than I. I recommend you to a careful perusal of her article in Public Libraries for last March. She has there analysed the principles that underlie reading guidance, and I am not going to attempt to duplicate what has been so well done. But perhaps I can add, from my own experience, and that of other high school librarians, some suggestions that may help.

Let us presuppose a well selected book collection, and a librarian who is equal to her task. What next?

Next, I should say, we must have an atmosphere of peace and quiet—not the forced hush of discipline, but the quiet that comes from absorbed interest. This can be accomplished, in part, at least, by ruthlessly cutting out all loafers, and making library reading a coveted privilege. In our school, students with poor scholastic standing are not admitted to the library except to do necessary reference work. Of course, it is often true that a poor "lesson learner" is a voracious reader, and can be guided into the richest fields of literature; but exclude such a student from the library until his grades are satisfactory, and you will soon have him back, with a good report from his teachers. The library privilege has been worth working for.

The starting-point for much of the students' reading is the home-reading list, prepared by the English department, usually with the cooperation of the librarian. These lists are carefully chosen; the classics are well intermingled with modern books; many popular things are included; and yet, what is the reaction of the average child to home-reading? Resignation! I say to a boy, as I charge "Bob, son of Battle" to him; "I hope you will like it". "Oh no, I don't suppose so. It's for a book report"—this by way of explanation. Now, I have got to stop whatever I am doing, and make that boy see, then and there, that he is going to find in that book a story of absorbing rivalry, with a mystery thrown in. If he does find all that I have promised, his faith in me is established, and he approaches the reading list hereafter with at least a gleam of hope.

I believe that the reading list can be made to seem what it is—an interesting field for choice, a mine of possibilities. Home-reading can come to be looked upon as a pleasure, rather than a duty. I sometimes wonder if the fact that a book report is required does not turn the reading into a chore. Still, an enthusiastic review in class will create a strong demand for the book among other students. In the classroom, too, the teacher gets in her good work, while

the librarian's opportunity is at the shelves. We can use the laboratory method, handling the books one by one, pointing out telling passages, suiting our tactics to the varying pupils.

We need to cultivate a sixth sense—an intuition for fitting the right book to the right child; and this must work quickly, in the midst of all our other duties. That means that we must know books, and have a feeling for literature, for art, for fine achievement in whatever field,—and especially must we know boys and girls, and have a sympathetic understanding of them. And sometimes we will not guide them at all. I do not believe in interfering with a student who browses about and chooses for himself. That sort will form his own taste and will always come to me for help when he needs it. Nor do I want to discourage the decided preference of any boy or girl, no matter if it is none too wise. We all like the things we have found for ourselves, and the child who has a hankering for "Penrod" will get real joy out of reading it, and will come back for more.

In our school we are just preparing to try an impersonal form of recommendation—largely to save the librarian's time, to be sure, but we hope it will lead to real browsing. We are pasting in the books labels that bear the printed legend "Other good books", and we will write in the space that follows, a few titles of allied interest. Thus, if a boy has read and liked "The Cruise of the Cachalot", he may find himself referred to Captain Slocum's "Sailing Alone Around the World." This may suggest Pumpelly's travels, which, in turn, might well interest him in the rigors of a Russian winter, and Tolstoi's "Master and Man". Back and forth the shuttle will fly (this is what we hope some day to accomplish) weaving a veritable magic carpet on which the youth can travel to the ends of the earth.

Or think what such a method might do toward developing a special interest, in science, say, in music, in camping, in a period of history! We can do our students no greater service than to encourage their delving deep into the literature of any subject that really takes hold of them or to work out their own plans and projects. It is a happy man who has a hobby to mount in his leisure hours. Upon it he can gallop away from all the cheap and vulgar amusements that allure an idle mind. He can go on joy-rides of his own, far more satisfying than those taken in his neighbor's automobile—and thus, joy-reading turns into joy-riding after all!

Our young people must not be allowed to forget that even in their leisure they do not belong wholly to themselves. They are members of a community that needs their support and cooperation; moreover, they are citizens of a large and interesting world that all should try to understand. The library can cooperate with the civics and history teachers in their efforts to interest the students' minds in public affairs at home and abroad. We have magazines which often prove to be eye-openers to the children, and to their elders, too, when taken home over night. The daily paper, too, can be shown to contain something beside sport news and the "funnies".

We can link up our daily problems with history and literature in the most fascinating way, if only we can find the time. It all sounds a bit visionary, and yet, is it?

They tell us that there is on the horizon a new method of teaching—the laboratory method—and that our books are going to be parcelled out into class room libraries, leaving us with empty shelves. This means, of course, that in schools where this method is practiced, a large part of the reference work will be done in the classrooms, under the teachers' supervision. The librarian will miss it, but may that not leave her more free to stimulate and direct the joy-reading of her students? She would have time to form little reading clubs, and could advise with those who want to buy their own books. She could do interesting bulletin work, and advertise her wares in many ways to tempt the unwary youth.

Let us see to it that we are supplied with plenty of good books, in attractive editions; let us make our rooms as beautiful as we may—real browsing rooms, filled with present and potential lovers of literature and the arts. And in after years our graduates will look back with gratitude to those teachers and librarians who gave them the "Open Sesame" to the magic world of books, and opened up resources for their leisure.

Miss Clara J. Hadley of Decatur gave an interesting paper on **"Training High School Pupils for Citizenship."** After defining a "good citizen" Miss Hadley spoke of the training for citizenship which the school gives as it prepares the pupils for their life work and of the part libraries and librarians have in this training. The library, the speaker said, is the place where all knowledge can be rounded out.

Mr. J. S. Cleavinger of the University of Illinois gave the concluding talk for the morning session in telling what the University of Illinois Library School is doing to train High School Librarians. The Library School is a place to "train" for library service and not a place to "educate" librarians. The "education" part is very well settled by the requirement of an A. B. degree for entrance to the Library School. Little attempt has been made to give training in any special phase of library work as a person well trained in the fundamentals of library science should be able to adapt herself to a special library. An exception has been made in giving special lectures every spring on work with children and high-school library work. There has been some thought of a course to be given outside of the regular Library School courses for those preparing to teach and take charge of the school library, but the advisability of such a course has not yet been fully decided.

The afternoon session was devoted to round table discussions, general questions and business left over from the morning meeting. Miss Mary S. King of New Trier, presided.

The first subject for discussion was the "Modification of the Dewey Decimal System to the Needs of the High School Library," lead by Miss Lillian Havenhill of Jacksonville. It was generally agreed that some modification is necessary for the smaller librarians but that the changes must be systematic and carefully worked out. A committee to work out such a modification to be presented at next year's meeting was appointed composed of the following members: Miss Logasa, Chicago, Miss Spangler, Joliet, and Miss Jordan, St. Charles.

"Problems Arising Out of the Laboratory Method of Teaching" was discussed by Miss Leora Janssen of Aurora. The laboratory method of teaching, according to the discussion, will mean more duplicate books, freer access to the books and a better knowledge of the use of books on the part of the teachers.

The Nominating Committee recommended Miss Mary S. King of New-Trier to fill the vacancy left by the expiration of Miss Logasas' term.

10. HOME ECONOMICS SECTION

Morning Session

The morning meeting was called to order by Miss Annabel Robinson who explained the absence of Miss Wardell, who was scheduled to preside. Miss Robinson then welcomed us to the University and gave words of greeting to those attending.

A secretary was appointed for the meeting and general announcements were read. Miss Treganza of Bloomington was called upon and gave the teachers an opportunity to become members of the State Home Economics Association.

It was moved, seconded, and carried that the nominating committee be appointed by the chair. The following were appointed: Miss Theobald of Decatur, Miss Treganza of Bloomington and Miss Hoskins of Decatur.

Mrs. Woolman was then introduced and gave an interesting and instructive talk on "The Relation Between Other Subjects in the High School and Home Economics." Mrs. Woolman's address covered the following points:

The desirability of dwelling on the subject of dress because it is our point of contact with the world. Dress may indicate vulgarity, extravagance, and a lack of proper standards of health. These careless habits carry over into later life, and it is the duty of Home Economics teachers to show by example first, and then by teaching, the right standards and correct ideas of dressing.

Dress is a mirror of the times and the Flapper is exciting present interest. Even though we would like to discontinue the art work, especially in public, we ought to give her credit for the improvement in shoes which are more healthful and sensible. She used goloshes in winter which were a protection even though they flapped. We should encourage sensible dress and help the girl to be attractive if we can.

Mrs. Woolman suggested that textile manufacture be studied only so far as it helped the girl to be a wise buyer of materials, and helped her to understand the market fluctuations.

The Commercial Geography Classes may help in giving a background to industrial conditions. Hygiene and Physiology Classes may give a detailed study of Clothing as it relates to health. Mathematics classes may educate the girl in Industrial Arithmetic. The English classes may bring out high ideals in home life. The Art classes may aid in appreciation of good line and color in dress.

Mrs. Woolman concluded her address by urging the teachers to use good judgment in deciding upon the amount of time to be spent on garments, and whether it is best to buy or make at home, ever keeping in mind the needs of the home in which the girl will live. We were sorry when Miss Robinson had to announce that it was train time and our speaker had to leave.

Miss Laura Worden, Hinsdale Township High School, gave a paper, entitled **"Glimpses of the Corvallis Meeting."** Those of us who had known Miss Bevier in our student days were happy to hear from her through Miss Worden's paper. The paper is given here:

Glimpses of Corvallis

After a summer spent in the west with its massive mountains, its delightful climate and its far reaching ocean, I feel that the title "Glimpses of Corvallis" is rather inadequate and I cannot in a brief talk tell you of all the inspiration and help I received. Nevertheless the week at Corvallis had its share and I shall try to tell you something of what our American Home Economics Convention meant to me.

In the first place there was the "Special". It is such fun taking a trip in your own special train and of course you know we had one. The friendships formed and the pleasures derived from personal contact with so many influential people in the work made a fitting introduction to the week at Corvallis.

Then, Glacier National Park! Unless you have seen those snow covered mountains and breathed that air laden with the fragrance of pines you cannot imagine the spell which came over us who were so fortunate as to be there. We reveled in the beauties of the place for two days and then sped on to Portland.

The Portland people left nothing undone which would have added to our comfort or pleasure. The Chamber of Commerce and the Progressive Business Men's League together with the Oregon Home Economics Association treated us to an all day trip on the Columbia River Highway Drive with luncheon at Eagle Creek. The same evening we were guests of the Portland Board of Education at a banquet given in the Benson Hotel of Portland. The toasts which were given around that banquet board are long to be remembered for their encouragement and belief in our National Association. If we had failed to realize it before we knew then what a potent power lay in our great organization.

Although we spent but one day in Portland, it was truly a great day. The next morning we left for Corvallis and were well taken care of in the dormitories of the Oregon Agricultural College.

I cannot give a summary of all the lectures and discussions which were given that week at Corvallis but I can tell you some things which have been helpful to me.

To us who are teachers or workers of Home Economics the word *Economy* should come to have the meaning of "wise choice". Should we not emphasize the selection of food and clothing more than we do? The crying need of our young women is for more instruction in wise buying; more knowledge as to what is really economical. Life may be compared to a cube with its three dimensions, length which is physical, breadth which is intellectual, and depth which is spiritual. Now imagine this cube swung in a sphere called the Fourth

Dimension or Economic Dimension or Economic Adjustment. The cube must swing true if there are to be no corners rounded off by friction.

But we are also teachers of *Home* Economics. Here, indeed, is need for vision and idealism. We ourselves must have high standards if we are to teach successfully this job of home making. If the home is the foundation of our social, economic and spiritual life, is it not essential that these girls make an intrinsic study of its value and meaning? All the phases of home making need to be correlated in order that it become a job with definite aims and ends. Emphasis on family and community relationships is not amiss, for are they not vital in the making or marring of a home? Suggestions were made for more practical home management houses in our secondary schools and colleges.

Then there are some very definite ideas given along the clothing line. Suggestions for teaching economic selection of clothing included such things as correct lines, becoming colors, durable materials and trend of fashion. In teaching lines, the dress form may be of great value. With a good commercial pattern make a gingham dress and fit to form. This may be used in various ways for studying lines. Camouflaging in made over problems can be taught by use of good design and well planned lines.

Then do you not think that more definite knowledge on the care, repair and renovation of clothing can be given in our clothing courses? This idea was suggested in connection with project work.

This seems to me to be only a smattering of all the good things which came our way this summer. In fact, I haven't mentioned any of the wonderful people we met. Our own dear Miss Bevier was there and I feel as did a woman who sat beside me in a meeting at which Miss Bevier presided. During the meeting she said to me, "What would we do without Miss Bevier to keep us well balanced?"

Miss Bancroft of Bement Township High School gave a review of about twenty of the text books and reference books to be used in Home Economics classes. Most of the books were included in a group collected for examination by those present. The paper follows:

Text-Books for Home Economics in High School

It has been said that the text book is an accepted tool in teaching and that it is impossible to think of the traditional school without thinking of a text book. We who are in the field of Home Economics, must say, not *a* text book, but text *books* and every form of available material to reach and to cover the various units of our work.

Books came into being when man reached a stage of development where he could realize the need of the permanency of concepts for further progress. The Home Economics movement has, comparatively speaking, but recently reached that stage, and since then has made such radical changes in these concepts and such rapid strides in progress that many of the would-be text books became what we term, old and out of date, almost before they were copyrighted so to speak. It is frequently stated that there has been greater progress in the making of text-books than in the making of other books. Dr. Winship said, "There has been no improvement in great works of fiction, in great poems, or in great essays in half a century, but American school books have improved marvelously, also miraculously." Surely the progress made in Home Economics texts has contributed its share to the truth of this statement.

The text book and the few selected reference books are essentials because, first, they are a convenient means of having at hand necessary data. It would be impossible to have the sources of all material examined or experimented upon by the student. The text book represents the wealth of collected exper-

iences which may be assimilated by the student with the least possible expenditure of energy. In the second place a text book presents a definite organization of material and offers to the teacher a basis for the arrangement and development of any particular topic. It has been stated that many teachers are forced to rely upon a text book because of their inadequate knowledge and training. Surely the Home Economics teacher is exempt from such accusation; for where in this state may she find a cut and dried course of study intended to be used in every locality and under all conditions, and a text book selected to fit that course of study? Fortunately, we realize the wide variation in the needs of individuals, and each of us in her particular locality, must discern these needs of her particular community and organize her work accordingly—and in order to do this successfully, she must have at her command material relating to possibly a dozen or more branches of the work; and the selection of an all inclusive text book to suit any one particular suituation is impossible. Imagine a Home Economics teacher using one and only one text book and pursuing that from cover to cover, year after year as is so often done in some secondary subjects. Superintendents and even school boards, who select text books and equipment for every other department of the school with out a qualm and with out consulting the instructor, will turn helplessly to the Home Economics teacher and readily admit that they are treading on unfamiliar ground, and willingly give her full sway—with, of course, usually restriction as to expenditure.

And so it is our purpose not to recommend or advise any one particular text for use, nor to review at length any especially selected books, but rather to call attention, and to offer for inspection, some twenty or thirty, both recognized and new, publications, among which there may be a few which may later prove a help to some and be of value in some special line of the work.

In selecting this material we have not classified it under the usual heads of Clothing and Foods, because we are all coming to realize that a wider scope of units must be recognized in order to successfully cover the problems presented by the home and community. Therefore, the books chosen for presentation at this time are miscellaneous and differ widely as to content, but may be grouped as follows: First, books suitable for use as texts, which may be safely placed in the hands of high school children. Second, publications which may be used for reference work either as class or as special assignments, and which may also be of help to the teacher in her daily preparation and plans. Third, books which are strictly for the use of the teacher who has herself already completed courses in foods, clothing, shelter, household management, etc., in addition to courses which gave her the elements of educational methods and principles.

In 1920 it was found by investigation, thru questionnaires sent out in this state that an amazingly large percentage of the larger and better school systems in the state were using as text books for Home Economics classes, the identical texts used at that time in normal schools and colleges. For this reason effort has been made to obtain a few books worthy of mention that are strictly texts for high school work. It is not our idea to recommend any one or all of them, for with out a doubt each and every teacher present is far more competent to choose the text that will best supply her need.

Possibly the most widely used and best known text book for cooking in this state is "Charlotte Greer's School and Home Cooking" published by Allyn and Bacon. It is a completely revised edition of her "Text Book of Cooking" and the new book is far superior to the old one. It can be easily read and understood by high school pupils. All scientific work is simply and adequately treated and brought accurately up to date. Suggestions for home projects are made throughout the book. Its adaptation of the meal method is good. Much attention is given to selecting, buying and preparing food, planning of diets for different individuals, dining room etiquette, etc. In fact the book offers

much more than many high school courses can cover but it is valuable also for reference and for home use. Above all it eliminates much note taking and thereby saves time.

Mabel Wellmen has written a book called "Food Study" (Little, Brown & Co.) in which she does not attempt to cover the entire subject of food, shelter and clothing, but rather interprets scientific material that is not easily available for high schools in a simple, conceise, and interesting way. The arrangement is unique. It is not that of the conventional cook book, nor is it based on the chief food principles, but is a logical working out of the subject matter in such a way as to make possible the early presentation of such subjects as meals and serving. At the end of each chapter is a list of references usually from Farmers' Bulletins or pamphlet publications, easily obtained, and also a list of questions, both of which may be of much aid to the teacher. The illustrations are well chosen and very clear in meaning. Upon the whole it is not a guide to the teacher or a reference book, but rather a real text book for high school classes.

"Dietetics for High Schools" by Florence Williard and Lucy H. Gillett (MacMillian) is the first book to give a scientific presentation of dietetics especially for high school students. It discusses simply and practically, the energy requirements in general; the sources and functions of protein, carbohydrates, fats, mineral elements and vitamines. Adjustments of diet to different ages and under different conditions is cleverly and interestingly taken care of by feeding the Irving family which consists of father, mother, a baby, three boys and two girls. The work is scientifically accurate and up to date, tho, taken as a whole, is somewhat technical and offers opportunity for serious study on the part of the pupil and additional inspiration and illustration on the part of the teacher. It has been suggested that the book might advantageously be used in boys' classes also.

"Food and Its Preparation" (John Wiley and Sons) is an elaboration of notes dictated by Mary Dowd and Jean Jamison to their own classes in the Washington Irving High School. It was designed to supplement the laboratory work and for that reason no recipes are given (it is coming to be generally conceded that the Home Economics teacher like the house wife has her own individual recipes and considers no others quite so good). The subject matter is well organized but no effort is made to restrict the arrangement and the teacher using the text may easily reconstruct the organization to better suit her own needs.

"Textiles and Clothing" by McGowan and Waite (MacMillian) was written because of a demand for a simple presentation of much of the subject matter so successfully covered by Woolman and McGowan in their more advanced treatise "Textiles" which has been so widely used in college work. This little book on textiles supplies a need felt since the breaking away from the idea of teaching merely sewing as an isolated subject. The relation of sewing to textiles and clothing is now recognized from the economic, social and practical sides and the high school girl must have opportnuity to acquire this knowledge. This text or parts of it may be readily adapted to almost any elementary clothing course.

Dry Goods Economist has published articles written by Darby on Cotton, Silk and Wool. The material in cotton has been organized and published in a book by that name and doubtless "Silk" and "Wool" will soon follow. The subject matter is excellent, but the book is not at present accessible.

"Elementary Home Economics" by Mary Matthews (Little, Brown & Co.) is said to be the only modern book for the seventh and eighth grades which has been planned to conform to the daily life in the average home. It is planned to meet the need of a girls' wardrobe and three meals a day for the family. It is constructed upon the "project plan" and by means of its "Home Problems and Questions" scattered at intervals throughout the book it links the work of the school to the life in the home.

After successfully presenting and assisting in the writing of several text books for nurses in training, Amy Pope has written "A Text Book of Simple Nursing Proceedure for Use in High Schools". The directions throughout are simply and clearly given and unlike many so called text books for home nursing it does not go deeply enough into technicalities to make one fear that a little knowledge might prove a dangerous thing. One of the more important phases of a unit course in Home Economics is usually Home Nursing and this book is worthy of consideration.

There are many books used in college and university classrooms which, if judiciously used and wisely chosen, may be of use not only to the teacher as a source of information but also for the assignment of references for high school classes.

Jean Broadhurst has so planned her "Home and Community Hygiene" (Lippincott) that, after having mastered a few fundamental facts concerning microorganisms, one may use the material in the book in any desired sequence. This plan for flexibility is aided by a complete glossary containing simple definitions. The purpose of the book is to increase practical application of hygienic measures in the home and the community. The simplicity of the book commends it to the use of nurses, teachers, and mothers.

"Successful Family Life on a Moderate Income" by Mary Hinman Abel (Lippincott) is not, primarily, a book on home economics. It is rather a study of the art of living and will undoubtedly prove of interest to the teacher of home making and of household management classes. It is not suitable for use as a high school text book, although in a few particulars, such as budget making, it might be of value as reference.

"Getting Your Money's Worth" by Isabel Lord, outlines and provides for house keepers' wants and needs. It is useful as a reference in the class room and is valuable to both men and women in adjusting personal financial problems.

"Household Engineering," which includes also the material before given in "New Housekeeping" by Christine Frederick (American School of Home Economics) contrasts new and old methods of housekeeping proceedure in a most vigorous style. Mrs. Frederick has eliminated from house work that monotony which comes from doing uninteresting and repetitive work without incentive. She has seen the necessity of making the home a laboratory and her writings are doubly valuable and practical because she herself has actually worked out these problems.

"Housewifery" by Balderson (Lippincott), although designed with the idea of helping women to reduce the tasks in the home in such a way as to save time, money and energy, also offers a bibliography, outline of courses, and suggestions for laboratory supervision that prove an aid to teachers. Well selected portions of subject matter such as labor saving devices, equipment, cleaning, etc. might well be chosen for reference work for high school classes. The last chapter of the book offers a few wise suggestions to teachers and outlines a few type lessons.

Tabers' "Business of the Household" might well be added to the list; but a more recent publication by that author and Miss Ruth Wardall, head of the Home Economics department of the University of Illinois has been written especially for high school work. The publication is just off the press and is not on sale as yet, but is well to keep in mind for investigation.

There is a bulletin issued by the Kansas State Agricultural College, that has been so widely accepted and used that bound copies have been issued in book form. It is called "Practical Cookery and the Etiquette and Service of the Table." It is in the main a recipe book but also contains many helpful facts for the housekeeper. The recipes are reliable, the explanations of scientific food principles simple and brief. The information on table service makes it especially valuable as a high school reference book.

"Everyday Manners" arranged by the faculty of South Philadelphia High School for Girls (MacMillian) grew out of a real need. It began by a discussion of the proper thing to do at a dance, a committee was formed and a manual of manners compiled. The evolution of the book is logical and compared with it, other books on etiquette are dull and formal. The humorous side readings keep the smile going, such as "Park your chewing gum outside" or, "Do you glitter like a jewelry counter." An excellent feature is found at the end of each chapter—Problems—who will solve them? Silhouette illustrations keep the humor and gayety throughout the book.

"Clothing for Women", Laura Baldt.

Written primarily with college classes in view it can be easily adapted to the use of High School students. It contains scientific, economic, and artistic facts concerning the construction of garments, wholesome advice to buyers of textiles and information to the teacher.

On account of the rapid changes in fashion such a book is difficult to write in a way so that it will continue to be of value. Miss Baldt selected permanent principles upon which to base her instructions. She suggests ways of changing patterns which tend to deviate from the hard and fast rules of garment construction.

"Principles of Correct Dress", Winterburn (Harper).

First three chapters by Jean Worth and the last chapter by Paul Poiret state very definitely the problems which dress presents to the designer. The intermediate chapter by Florence Winterburn interprets these problems to the amateur designer. It has no illustrations and is of value to those who have had some design experiences. It would fail to reach many who need it because of the unfamiliar allusions and comparisons. Well worth study by a teacher as it lifts one above mere pattern stitches and brings the realization of the effect of well designed costumes.

"The Secret of Destructive Dress" by Mary Brooks Pichen (Soman's Institute) helps one to know ones type and to dress accordingly. It is written for the woman who plans and chooses her own clothes, but may be used as a reference in high school classes.

Estille Izor puts out a little book "Costume Design and Home Planning" which is very simply written and easily understood by children. It is tastefully illustrated and gives brief and to the point discussion of subject matter.

"Pattern Making," Agnes K. Hanna.

This book is planned for use as a text book in college or normal schools and for teachers in service. The book endeavors to make the teachers of garment construction see the need of making pattern study a definite part of the course they are giving.

The subject matter is based upon three standard pattern drafts, the waist, sleeve, and the skirt, and all other patterns and drafts are developed from them.

It was written with the hope that the use of a comprehensive text book in this particular phase of clothing work might assist in strengthening the work done in college clothing courses and prove of value to the teacher in the field.

"Clothing", Woolman.

Gives help on choice of clothing, encouragement to the new consumer.

Getting your moneys worth means how to choose and how to buy.

Budget inflexible, useful in class room but especially valuable to men and women in adjusting personal financial problems.

"Principles of Interior Decoration" by Bernard C. Jakway, extension lecturer in Interior Decoration, University of California, presents the most helpful information for interior decorators, students of design, teachers of design, and those who are concerned in the furnishing of their own homes. A large

part of the book is developed from the fundamental principles of design, is simply told and excellently illustrated. Many of the comparisons and allusions presuppose a knowledge of art, but upon the whole it is understandable reading.

"Domestic Architect," Robinson (MacMillian), presents in well organized form many facts of practical significance which teachers of home planning have been forced to gather from many sources. It is simple enough for High School, definitely and clearly arranged subject matter.

Amy Rolfe has written a little book called "Interior Decoration for the Small House" and it is just that. It presents the problems of decoration in the small, moderately priced home and avoids the elaborate.

The progressive teacher should not only keep in touch with new text books, magazines and periodicals relevant to her work, but she should make an effort to obtain the newer materials in the form of instruction in new methods, etc. Cooley, Winchell, Sphor and Marshall's Teaching of Home Economics, thought not new, is recognized as very helpful. It contains suggestions for various phases of the work—lesson plans, bibliographies, etc. Agnes Hanna has recently written a book somewhat similar in plan, but radically different as to arrangement and subject matter. Both of these books would doubtless prove a professional aid to one not already familiar with them.

Very often a sewing instructor is able to successfully construct some particular part of a garment but does not always know just how to present this problem to her pupils so that they will understand and follow each step. "American Dressmaking Step by Step" published by the Pictorial Review Company is a most excellent help for the teacher. It is well supplied with prints of actual photographs of processes in garment construction at various stages. The illustrations themselves may often be used as models.

The sources for material such as bulletins, pamphlets and illustrative material are too numerous to mention. We merely urge you to keep a goodly supply and use judgment in the selection, for not all that is published is of value authentically or practically. Choose your material from reliable sources and make sure that it suits your need.

Miss Theobald of Decatur led the discussion on this subject.

The teachers were asked to give their preferences. Greers "School and Home Cooking" and McGowan and Waite "Textiles and Clothing" were given the preference. Gillets' "Dietetics for High Schools" and Pope's "Home Nursing" were recommended by Miss Hess.

A request for a Recipe book was made and Miss Lyford's book was recommended.

The session adjourned to meet at 2 o'clock.

Afternoon Session

The session was called to order by Miss Robinson.

The Report of the Nominating Committee was read. Miss Ruth Bancroft of Bement and Miss Peterson of Peoria were named to succeed Miss Helen Murphy and Miss Katharine Gailey whose terms expired.

It was moved, seconded, and carried that the report be accepted as read and those nominated be declared elected.

Miss Harriet Barto, University of Illinois, presented a paper on the Subject, "**The Newer Aspects of Nutrition**". The paper follows:

The Newer Aspects of Nutrition

I have been asked to talk to you on the newer aspects of nutrition. As I understand it, you would like me to discuss or call your attention to some of the outstanding facts which recent investigations have contributed to our knowledge of what is necessary for a well balanced, adequate diet.

The subject of vitamines is so much in the public mind and new ideas are so constantly being brought forth and confirmed or disproved that one feels at a loss to know what to accept as fact and what to consider fascinating theory, and I might add, what to regard as advertising propaganda.

Beginning about 1912 with the work of Hopkins in England and Osborne and Mendel and McCollum and Davis in this country which showed conclusively that permanent normal nutrition required something other than sufficient proteins, fats, carbohydrates and mineral matter in the food supply, we have the rapid development of the "vitamin theory."

At the present time we recognize the existence of three vitamins and we are beginning to ask whether there may not be a fourth.

Vitamin A is associated not only with growth but with certain pathological conditions. If the diet is deficient in this vitamin the individual becomes more susceptible to bacterial infection and this lowered resistance results in many cases in the development of an eye disease which disappears when vitamin A is added to the diet. Susceptibility to tuberculosis, pellagra and rickets appears to be in some way related to a lack of this vitamin. A liberal supply of vitamin A seems necessary also to successful reproduction. Animals apparently normal themselves will remain without offspring on diets deficient in the vitamin and will begin to have normal families when the vitamin is supplied.

Vitamin B is associated with normal growth and reproduction and with the prevention of the nerve disease beriberi. It has recently been shown that vitamin B has a marked effect on appetite, and that animals fed on diets adequate in every way except in this vitamin will lose appetite, later refuse to eat at all, and decline rapidly in weight and strength. If vitamin B is fed separately the animal will recover his appetite in a remarkably short time and eat the same diet which he previously refused.

Vitamin C cures or prevents the development of the disease scurvy. Hess has emphasized the widespread occurrence of sub-acute scurvy among babies and the fact that the symptoms of the disease in its mild form and of malnutrition are very much alike. Of late there has been some attention given to the possible relation of vitamin C to the development of sound teeth. Dr. Percy Howe of Boston has shown the striking changes which occur in the teeth of guineapig's suffering from a lack of vitamins and the regeneration of teeth and bone when vitamins are added to the diet.

The role of vitamins in nutrition is so spectacular, and popular as well as scientific, and literature has been so full of the topic that the general public has become interested in and in many cases wildly excited on the subject.

McCollum has definitely answered the question of whether proprietary preparation of vitamins are worth what they cost or are of any benefit whatever. Of six brands tested not one was found to contain vitamin B in active form.

The manufacturers of compressed yeast and yeast foam advertised their products as rich in vitamins and decorated the pages of the magazines with pictures of languid men and women and cages of rats. The fact is that fresh yeast is the richest source of vitamin B but this vitamin is so widely distributed in common foods, milk, cheese, vegetables of all kinds, whole grain cereals,

fruits, meat and eggs, that it is least likely to be lacking of any of the vitamins and is most easily and cheaply and just as efficiently supplied by including in the diet those foods which contain it.

Vitamin A is found most abundantly in milk, cream, butter, eggs and green vegetables.

Vitamin C is found chiefly in fresh fruits and vegetables. It is much more sensitive to heat and drying and age than A and B. Canned fruits and vegetables, with the exception of canned tomatoes, have lost more or less of their original content of C, and dried foods, with the possible exception of dried milk contain little or none.

Vitamines A and B withstand high temperatures fairly well in neutral or acid solutions and are not much affected by drying or by age.

Some of the questions most frequently asked of the Home Economics teacher are in regard to the digestibility of various foods or of the same food cooked in different ways.

Are hard boiled eggs harder to digest than eggs soft boiled

Are raw eggs hard to digest?

Is rare beefsteak easier or harder to digest than steak well done?

Some of these questions we cannot answer positively. Sometimes experiments show that the difference is very slight. In some cases it is a difference of rate of digestion rather than of completeness.

An experiment reported by the Department of Nutrition of Columbia University and designed to test the digestibility of rolled oats cooked in various ways, indicates that so far as the coefficient of digestibility is concerned, there is very little difference between rolled oats cooked over night in a fireless cooker and that boiled for ten minutes or made into macaroons or muffins. Cooked in any of these ways it is very digestible; the length of time of cooking oatmeal porridge affects the rate rather than completeness of digestion and also affects palatability as influenced by flavor and texture.

The same laboratory reports that there is no difference in the digestibility, as measured by completeness of digestion, between egg white cooked and raw.

Probably most of you are familiar with Hawk's study of the comparative digestibility of meats cooked in different ways. In a series of experiments Dr. Hawk showed that there was very little difference between rare, medium and well done beef in the time required to empty the stomach.

Lamb remained in the stomach about the same length of time as beef and not quite as long as pork.

There was no marked difference in the time required to digest eggs cooked in different ways, though raw eggs tended to remain in the stomach a little longer than cooked eggs.

The question of whether the boiling of milk affects its digestibility is an old one. Boiling does not affect milk so far as completeness of digestion is concerned. It does increase the ease with which it is digested, that is, rapidity and possible comfort. In the average adult no difference would be apparent. For little babies it is sometimes advisable to boil cow's milk because the curds formed in the stomach will be softer and smaller, more nearly like those of human milk. Raw cow's milk, especially if undiluted, forms harder tougher curds than human milk.

In a recent number of the Journal of Biological Chemistry Dr. Sherman of Columbia University reports a study of the calcium requirements of growing children. He found that children from three to thirteen years old require about 1 gram of calcium per day for optimum storage of calcium. This is more than the requirement, as we understand it, of adults, (0.45 grams) and more than the standard we have set (50% above the requirement or 0.68 grams per 150 pounds man). Children made the optimum storage of calcium only when the diet included a quart of milk per day, and they seemed unable to utilize the calcium of vegetables as efficiently as the calcium of milk.

"Since the child of three to thirteen years, although eating less food than a man, will need more than 0.68 grams of calcium in his food to support optimum calcium storage and bone and tooth development, it would seem that a higher dietary standard for calcium, perhaps 1 gram or more per man per day, would be better in all cases in which the group of people to be fed includes any growing children.

In view of the results obtained with different foods as sources of calcium, it is desirable also to emphasize the importance of a quart of milk per day for every child, and it would be best to maintain this level of milk intake up to at least the age of twelve to fourteen years."

I want to call your attention to a recent pamphlet published by the New York Nutrition Council on "Height and Weight as an Index of Nutrition." This is an attempt to clear up some of the existing confusion with regard to weight and height as a practical index of nutrition. Is the average weight of a large number of children the "normal" weight for any particular child? How much variation from the average should be permitted before deciding that a child is underweight? Something, we realize, is wrong with our present standards. It is illogical to expect a child of Italian parents, living in a congested district of New York City, to conform to a norm made largely of children of English, German and Scandinavian stock or of well to do children of native stock. Then too, there are seasonal variations in rate of gain, children making more rapid gains during August, September, October and November, so that an error occurs if the expected gain for a month be determined by dividing the expected gain for a year by twelve.

There are, of course, other signs of undernutrition besides retarded weight or height, but when the selection of undernourished children must be made solely on the basis of height and weight it must be frankly recognized that such a procedure only sorts out roughly the children in need of care.

Though I realize the faults in our present standards and recognize the necessity for scientific study and tabulation of results, I feel that there are some things which are safe and worth while which can be done while we wait for the experts to do the more difficult and specialized work. I believe that the Home Economics teacher can make a valuable contribution to the health program in the schools by giving her interest and help to these three measures: weighing and measuring of school children in order to weed out and give special attention to those who vary greatly from the average weight for height and age; cooperation in arranging for mid-morning lunches in the schools for those who need them; simple instruction in rules of health to all and not merely a segregated group of underweight children.

Miss Alla V. Johnson, Illinois Wesleyan, led the discussion, opening it with the following:

"The progress of science is a history of great discoveries of facts which become established and of destruction of theories which are temporary mental conclusions shown later to be untenable, or their author no longer able to defend them. An illustration of this is found in the study of Nutrition. So the problem confronting every teacher of Foods and Nutrition is how to keep up to date in her subject matter. Since accumulated knowledge in nutrition is of little value until it is made to function in the lives of the individuals who make up our public there is a second problem. It is the task of effectively passing on to the pupils or to the Community in which she works, the information the teacher has acquired.

Taking up the first problem, let us consider for a moment the avenues through which the teacher of Nutrition may keep up to date. One would be to return at comparatively short intervals to some University especially to one in which research in nutrition is carried on, and restock so to speak, with information and new methods. As desirable as this may be it is not practical and should not be depended upon entirely because it would be within the means of comparatively few. We must have ways of which all teachers can take advantage.

Fortunately we have up to date material in our Scientific Journals that gives us results of research. "The Home Economics Journal" should be in the library of all the Home Economics teachers. So long as we have Dr. Blunts and a host of others who not only do research work for us but digest and summarize vast amounts of experimental work that has been accomplished by others we should appreciate their efforts to the extent of reading and profiting by the work they have done.

The outstanding book in the field of Nutrition at present is Dr. E. V. McCullum's "The Newer Knowledge of Nutrition" (Ind. Ed. revised $3.80 pub. by Macmillan).

The State Library at Springfield is also a source of information. If you do not know the books, the librarian will send you a list of the latest ones on request. The Journal of Home Economics gives reviews of the new books each month. If you have access to the Journel of Biological Chemistry, read that. From it you get first hand the published results of experimental work that has been accomplished in nutrition. The chief objection is the cost. You may be able to secure the Journal of the American Medical Association. It does not have much material on Nutrition but it is usually very valuable.

It is my belief that the progressive school in the near future is going to have a really complete nutrition program which will include plans for improving the nutritional condition of all the school children. The greater amount of work has been done for the undernourished children, which constitute about 20% of the total enrollment. We should have definite health teaching for all the children with emphasis upon the relation of food to health."

The teachers were asked to give instances of nutrition programs carried on in their schools during the past year.

Mrs. C. W. Moore of Stanford and Miss Mable Gibson of Clinton told of work done in their respective classes in keeping height and weight charts for class members and younger children.

The discussion closed and Miss Hess, Supervisor of Vocational Home Economics, Springfield, was introduced as the next speaker. Her paper was **"Tests in Home Economics"**. She also gave a summary of the results of the tests used in the Vocational classes last year. Her paper follows:

Tests in Home Economics

Thinking people no longer question the fact that standardized tests have brought about great improvement in many subjects of the curriculum. This is especially true of such subjects as arithmetic, reading, spelling and writing for which we now have standardized tests which may be used throughout the country. Why isn't it true of home economics? The answer is readily found. The subjects which at present have the most carefully and well worked out tests are those that have clearly defined aims or purposes. Home economics is still vague in its purposes and really has no well defined objectives. The grade in which the work is begun, the subject matter taught, the method of teaching and the standards of attainment have varied with the locality, the preparation of the instructor and the purpose for teaching. Another reason is the comparative youth of the subject. Compared with many other subjects of the curriculum home economics is still a child.

Any investigation relative to Home Economics tests will reveal that very little has been done in scientific measurement in home economics. At present there are no standardized tests or scales. The only available scales are the Murdoch Sewing Scale and the Knapp-Williams Scales, although there are several tentative tests and a few scales in preparation. In this paper the scales for measuring skill and the tests for measuring information and judgment will be discussed separately.

Description of Scales for Measuring Skill

The Murdoch Sewing Scale—This scale represents the result of an experiment conducted by Katharine Murdoch in 1918 and 1919 at Teachers College, Columbia University and described by her in a monograph entitled "The Measurement of Certain Elements of Hand Sewing". Her aim was to make a scale by means of which merit in certain forms of hand sewing may be measured. This scale consists of fifteen graded charts which are reproductions of a graded series of sewing samplers. There are three views of each sampler, showing the stitches in their original size. One is a full view of one side of the sampler and shows the way the stitches are arranged upon the original. A second view gives a full-length view of the reverse side of the seam.

Each sampler has a definite scale of value arranged in order starting with the one which has the lowest value. These values are in terms of units of amount. The lowest value is 0 and the highest 16.4. The scale measures skill in certain fundamental stitches namely: basting, backstitching, overcasting, hemming, running and combination stitch and two sewing processes the making of a hem and the making of a simple seam. The method of using the scale is as follows: any sample of sewing which is to be judged should be compared with the sampler on the scale which is most like it in general merit. If it is exactly the same it should be assigned the number which is the score for that sampler. If it falls between two samplers of the scale it should be given a number between the scores assigned these samplers. The scale has been widely used but insofar as the writer can learn there are no standards for it.

The advantages of the Murdoch scale are: (1) it lessens variability in grading pupils; (2) pupils can grade their own improvement on the scale; (3) it furnishes a means of scientific measure of certain phases of sewing instruction; (4) the charts are convenient in size for classroom use; (5) the reproductions are clear cut and portray clearly the stitches and processes to be measured; (6) the charts are inexpensive.

The limitations of the Murdoch Scale are: (1) the scale is simply a measure of general merit and does not measure the specific elements of the stitches and processes measured; (2) the scale has not been standardized, there are no norms of accomplishment for the various grades; (3) it is not an

analytical scale, therefore it is difficult to determine the specific causes of poor products; (4) some of the phases measured by the scale do not have sufficient social value.

A description of the manner in which Miss Murdoch worked out her scale may be found in Teachers College, Columbia University Contributions to Education, No. 103 "Measurement of Certain Elements of Hand Sewing" by Katharine Murdoch. This book contains the scales but Teachers College also publishes the scale in chart form. The chart form is much more desirable for classroom use because the scales appear on but one side of the chart while in the book the scales are printed on both sides of the page and it is difficult for the student to compare his work with the pictures representing the various scores on the scale.

The Knapp-Williams Scale—At the same time that the Murdoch Scale was being devised at Columbia University Clara B. Knapp and Florence Williams were working on a somewhat similar scale at the University of Chicago. Their purpose was to design scales for measuring skill in two constructive processes namely, hems on a straight edge and French seams. This scale differs from the Murdoch Scale in that an analysis was made of the factors which contribute to excellence in the sewing product. These were five in number namely: tension, length of stitch, spacing, constructive elements and neatness. The scales consist of three values for each of the five factors of excellence for the two processes. To use the scale one compares the piece of work to be graded with the printed scale and ranks it as good, medium, or poor in length of stitch, tension, neatness, constructive elements and spacing, according to that quality on the printed scale which it most closely resembles in each of those factors.

The advantages of the Knapp-Williams Scales are: (1) they lead to the definite setting of standards of attainment; (2) they lessen variability in grading pupils; (3) pupils can grade their own improvement by the scales; (4) pupils can diagnose their faults in the two processes measured; (5) they furnish a means of scientific measurement of certain processes in machine sewing; (6) they make possible comparison of schools and classes; (7) the reproductions are clear cut and portray clearly the processes to be measured.

The limitations of the Knapp-Williams Scales are: (1) the scales are at present found only in the monograph, "Home Economics in American Schools," making it difficult for the average classroom teacher to use unless she cuts the pages from two books and mounts them on cardboard or some other material.

Miss Williams has had the scales used by 3800 students in various cities in different sections of the United States but says that it is difficult to ascertain accurate standards for different grades because of unstandardized conditions of home economics courses.

The Tucker Test—In 1920-1922 Rosamond Cook of Iowa State College, Ames Iowa began organizing a test for measuring ability in using the tucker, a sewing machine attachment. The scales when completed will measure rate and skill in making a three-eighth inch tuck with a space of one-fourth inch between the tucks, a one-eighth inch tuck with a space of five-sixteenth inch between the tucks and a one-sixteenth inch tuck with a space of one-half inch between the tucks, on lengthwise, crosswise and bias materials. In addition to making a scale to test the results of tucking Miss Cook also expects to determine the best time to teach the use of the tucker. Age? Grade?, to find the best or most effective method of presenting the tucker; to locate defects in the work, to locate the cause of the defect, and to offer remedial measures; and to establish standards of work for the various grades.

To date 500 students have been given the work, but Miss Cook reports that the majority of the work has been done by college students. She also says that whether this is an indication that the work should not be attempted before that time, or because teachers have not been interested in teaching it in the grades we do not know. The work is still in the early stages and no conclusions have been reached as yet.

Miss Cook's work is somewhat similar to Miss Murdoch's but her scale when completed will be superior to Miss Murdoch's because while Miss Murdoch spent much time in locating the faults in sewing she has not offered any remedial measures, other than the most general ones of inspiring the pupil to "be careful," etc.; Miss Cook expects to locate the cause of the defect and to offer remedial measures. To date Miss Murdoch has not determined any grade standards or norms for her work while Miss Cook hopes to establish standards of work in the various grades. I might say in passing that Miss Cook is expecting to attend Teachers College next semester and if possible to have something definite to offer us before long. To date she has been successful with the help of 300 teachers in erecting a score card to assist in judging the work of the tucker. This score card is being used by the judges who are now working on the material that has been sent out.

The Emporia Buttonhole Study—Hazel K. Stiebling and J. C. DeVoss at the Kansas State Normal School, Emporia, Kansas began in 1920-1921 to collect data from which they planned to construct a scale for measuring skill in making buttonholes. They proposed to show the skill which the pupils in the various grades of the public school attained in making buttonholes, considering both the quality of the work and the time involved in the process. They secured buttonholes from more than two thousand pupils and from a study of these buttonholes they devised a chart which is to be used as a teaching device to show the importance of various elements in buttonhole making and to furnish an objective standard by which students may evaluate their own work. The chart shows eight buttonholes each lacking in one quality. The student compares her work with the chart and scores her work, one for perfect results for each specific element and 0 for imperfect results. The chart may be secured from the Bureau of Educational Measurements, State Normal School, Emporia, Kansas.

Information and Judgment Tests

The tests so far described have been those for measuring skill in certain phases of hand sewing and processes in garment construction. The descriptions which follow are of another group of tests which measure information and judgment in certain phases of work in home economics.

Preliminary Judgment Test in Home-making—Helen C. Goodspeed in 1919-1920 while State Supervisor of Home Economics in Wisconsin together with Bernice Dodge at that time a member of the University of Wisconsin faculty organized a test entitled "Preliminary Judgment Test in Home-making". The test consists of sixteen exercises. Each exercise consists of a statement for which three reasons are given, all of which are true, but one is the essential or most important reason which the pupil is to mark with a cross. A time limit was set for the test. It is intended primarily for eighth grade pupils but may be given to those of elementary or high school level. To date the test has been given to approximately five hundred pupils in the eighth, ninth and tenth grades in various cities of Wisconsin and the median of accomplishment on three hundred and five of these papers was eleven. The test sheets may be purchased from the Parker Publishing Company, Madison, Wisconsin.

The advantages of this test are: (1) it lessens variability in grading pupils; (2) it offers a means of determining emphasis in instruction; (3) it requires a small amount of time; (4) the test sheets are inexpensive and easily handled; (5) the pupils can easily check their own scores.

The limitations are: (1) nothing has been done to standardize the material; (2) some of the statements and reasons given for them are hardly worthy of being accorded a place in a judgment test either from the standpoint of social usage or educational value; (3) the title is misleading because the test is rather one of information than of judgment.

The Detroit Study—Grace P. McAdams, Supervisor of Home Economics, Detroit, Michigan, and S. A. Courtis have for some time been working out a series of tests in food and cookery. These tests are being planned for pupils from the sixth grade through the high school, for the purpose of measuring ability in organization and information. The tests are intended to take the place of the usual review or examination. For example after the pupil has completed a series of lessons on breakfasts, she is given the organization test, "Preparation of a Breakfast", wherein she arranges in sequential order the steps necessary in preparing a breakfast. The information tests are checking tests in which the pupil is asked to decide certain important facts regarding various articles of food. The tests have been given to the pupils of several schools in Detroit and it has been definitely proven that they are a means of plainly showing both teacher and pupil where they stand in relation to the work to be done.

The tests have the advantages of being very simple to use and of giving definite results. They require a minimum amount of time to give them and are easily scored.

The Trilling-Bowman Tests—During 1918-1919 Mabel B. Trilling and Leona F. Bowman of the University of Chicago faculty designed a series of tests to measure acquisition of information and the ability to reason in situations involved in the use of material presented in textile and clothing courses. There were three series of tests; one each for textiles, dress designs and house planning. Each series consisted of exercises forming either a completion or a checking test. These tests were frankly devised as tentative tests but they were given to a sufficint number of schools to provide interesting results and they have proved an incentive for further study in the testing movement among home economics teachers. The tests were easily administered and in most cases easily scored. In determining the material to be used in these tests none was included that was not socially worthwhile and that was not found in each of the nine textile and clothing text books used by ninety-five percent of the schools teaching home economics in the United States. The tests are described at length in the monograph "Home Economics in American Schools".

The Home Economics Information Tests of Teachers College, Columbia University—In 1920-1921 a group of graduate students in the home economics department of Teachers College, Columbia University began work on Home Economics Information Tests for girls completing the eighth grade. These students were successful in working out what are known as the Home Economics Information Tests of Teachers College, Columbia University. They consist of three small booklets known as Set I, II and III. Set I is made up of four tests in textiles and clothing; Set II has six tests in foods, and Set III is made up of eight short tests in home-management problems. The various tests in each set have different values of importance. It is not intended that the sets all be given at one time because each set required from one-half hour to one hour to complete and pupils could not do themselves justice if all are given consecutively. The tests are checking tests and are devised to determine the information acquired by eighth grade girls in the three phases of home-making outlined above. They are also intended to enable the class room teacher to determine which parts of her teaching are really functioning. Fourteen hundred tests were given in forty different schools last school year and Miss Grace Reeves of Teachers College is at present compiling the data from these tests. Copies of the tests may be secured from the Bureau of Publications at Teachers College, Columbia University.

The University of Indiana Preliminary Food Tests—In 1921-1922 Florence King of the Home Economics Department of Indiana University under the supervision of the Director of the Bureau of Cooperative Research of the University devised a preliminary test in Foods. It is made up of three parts, two of which are checking tests and the third a completion test. These tests are intended to measure the information the girl has secured in her study of foods.

The tests were being sent out to schools last spring but to date the writer has not been able to secure anything further concerning these tests than the information given above.

The Illinois Preliminary Home Economics Tests—It was decided that Tests in Home Economics was to form part of the first year's work of the Illinois Home Economics Association and early in December 1921 the following committee was appointed for this work.

Laura Avery—Joliet, Illinois
Ethel Dole—Illinois State Normal University
Euphenia Evoy—Chicago Normal School
Anna Belle Robinson—University of Illinois
Mabel B. Trilling—University of Chicago
Adah Hess—State Department of Education

The committee decided for the first year to confine their work to two very simple tests, one on the classification and function of foods and another on the use of cotton materials. These tests were planned for students who had finished one or more semesters of either foods or clothing work in high school. The tests are information tests and are also intended to enable the teacher to determine how far her teaching is functioning in the phases of home economics represented by the tests. Each test consists of ten exercises and requires from ten to fifteen minutes of time.

In May 1922, the committee sent out 5072 clothing tests and 3655 food tests or a total of 9727 tests to 194 schools who had signified their willingness to assist in the testing work. Of this number 157 schools or approximately 80% of the schools to whom the tests were sent participated and returned 2913 clothing tests and 2028 food tests or a total of 4941 tests. It may be interesting to know that 105 schools took both the foods and clothing tests; 25 schools took only the clothing and 27 schools took only the foods tests. Thirty-seven of the schools to whom the tests were sent did not participate in the testing work. Several of these schools sent in their reasons for not participating. In some cases, the tests arrived too late in the school year, the schools had either closed or were holding their closing week. In three instances illness of the regular teacher prevented the schools from participating and in two schools, the schools had been closed because of quarantine. With reference to the schools who gave no reason for not taking part after having received the tests, the committee naturally thought that possibly the teachers upon receiving the tests felt that their pupils could not acquit themselves creditably because they had been teaching simply cooking and sewing and not foods and clothing.

During the second summer term at the Illinois State Normal University twelve members of the writer's summer school class each contributed two hours work in scoring the tests and three members of the class gave approximately thirty hours each to scoring the tests and collecting the data on the individual schools taking the tests. Early in October we secured the term grades for approximately forty-five percent of the pupils who had taken the tests last spring. A very cursory examination of these grades and the test scores leads one to believe that some correlation does exist.

The work done in Illinois with these preliminary tests has been worthwhile but there are some legitimate criticisms regarding these tests. Some of the questions permitted of personal interpretation and if the tests are to be really valid we must select questions that will allow of no personal interpretation. Numbers four and seven of the foods test are practically the same. On the other hand many of the teachers cooperating in this work report that these very simple tests have aided them in learning how far their teaching was functioning in the phases measured and that the students themselves were enthusiastic about them. Both teachers and pupils want more of them. The advantages of tests of this sort are (1) they are easily administered; (2) they require little time for

giving them; (3) they are easily scored; (4) they furnish objective evidence to both teacher and pupil of how well their work is functioning in the phases of home economics being measured. The disadvantages of the present tests are: (1) some of the questions permit of personal interpretation; (2) there are not enough of the tests. Instead of one test in foods and one in clothing we should have several not only in foods and clothing but in the other phases of home economics.

For you, the home economics teachers of Illinois, there is work to do, you can assist this year's committee of the Illinois Home Economics Association by cooperating with them, by giving the tests to your pupils when requested to do so, to send in your criticisms and suggestions to the committee and to try to formulate similar tests.

Miss Cremeans, of Benton Township High School, led the discussion. The following questions were discussed:

1. Could the tests be used in place of regular examinations?

Ans.—There was some similarity between the term grades and the test grades but the material is not complete as yet.

2. Did the amount of time allowed make the tests fair?

Ans.—Most of the girls finished the tests in less time than the minutes allowed.

3. Are the tests worth while?

Ans.—Miss Dole of Normal University voiced the general sentiment of the group in saying that the tests led to a standard upon which we could build our courses.

Miss Hess criticised the tests that were sent out last year and said they expected to have another set this year.

Miss Elizabeth Todd of the University of Illinois conducted the question box.

Question 1. What subjects are considered as allied to Home Economics under the Smith-Hughes law?

Ans.—Miss Hess—General Science, Physiology, Hygiene, Botany, Zoology, Horticulture.

Question 2. Tell how to organize and provide programs for the Home Economics Clubs.

Miss Cremeans of Benton and Miss Mable Gibson of Clinton responded when called upon to give their experience of the clubs they had organized.

Question 3. Please name a good recipe book for serving large numbers.

Ans.—"Quantity Cookery" by Richards and Treat. Little, Brown & Co.

Miss Robinson invited the Section to attend the Reception at the Woman's Building and the sectional meeting adjourned.

Respectfully submitted,

MABLE H. GIBSON, *Secretary*.

11. MANUAL ARTS SECTION

Morning Session

The session opened at 9:15 A. M. in Bradley Hall, L. A. Tuggle of Danville presiding. After announcements the following program was given:

The Manual Arts as a Business Asset—F. D. Crawshaw, Aetna Life Ins. Co., Peoria, Ill.

How to Get Good Design in Shopwork—Maude C. Meyer, Decatur, Ill.

The Manual Training Teacher and the General Continuation School—Ernest C. Phillips, University.

Afternoon Session

Mr. Tuggle having broken active relations with the section at the close of the morning meeting, in favor of the county superintendents section (being supt.-elect of Vermillion County), had appointed the section secretary to act as chairman, who called the meeting to order at 2:00 o'clock.

Objectives and Methods Necessary to the Proper Functioning of Manual Arts Courses in Our Educational Scheme—Albert F. Seipert, Peoria, Ill.

Report of the Committee on Workable Standards for High School Wood Work—Arthur J. Mays, University.

Report of the Committee on Workable Standards for High School Mechanical Drawing—John H. Sharda, West Frankfort, Ill.

These reports were discussed but as usual time was too short and it was decided to accept them, the committees to continue their efforts another year.

Mrs. Nelle Wall, Riverside; John H. Sharda, West Frankfort; H. C. Ruckmick, Le Roy; Arthur J. Mays, University, were elected as members of executive committee, C. H. Dalton, Lovington, being a hold-over member.

The present executive committee is as follows:

C. H. Dalton, Lovington, 1923 Chairman.
Mrs. Nelle Wall, Riverside, 1925 Secretary.
John H. Sharda, West Frankfort, 1925.
Arthur J. Mays, University, 1925.
H. C. Ruckmick, Le Roy, 1923.

The papers and reports are given herewith.

C. H. Dalton, *Secretary.*

How to Get Good Design in Shop Work

Maude C. Meyer

This is a big subject to give to an inexperienced woman. If I could take it into its many fields—to the shop of the smith, the carpenter, the weaver, and the potter, I would have a book of many chapters.

All of you realize how necessary it is that we should teach our students to know good design. There is a crying need in our industries now for better designs. Our markets are flooded with poor ones. Why? Because poor designs are the best sellers in America. Foreigners knowing and appreciating good designs themselves manufacture poor ones and ship to America to sell to our people. They know that we will buy them.

Our college graduates fill their bookcases with the very best literature. But their homes are filled with hideous rugs, wall decorations and furniture. They have been taught to appreciate the best in the books that they seldom, if ever, look at. But they have not been taught to desire beauty in the things, they see and live with every day.

Our people need to be taught to know and to want good things. We need to awaken a sense of beauty, which has become deadened through constant contact with every day ugliness. There is only one place to do this. That is in the schools. The departments best fitted for this are the fine arts and manual arts departments.

Ruskin says, "Drawing may be taught by tutors but design only by heaven". He is partly right. Some of us can design better than others with the same training. Work always rises to the level of the worker. However, I do not believe that the ability to design is wholly a talent one is born with. It is as much a matter of persistent work. There is much common sense and orderly thought involved in the process. There is no short cut nor any rules to follow as a substitute for personal thought and effort.

By different teachers of design we are sent to various places for inspiration. One will send us to Nature. What do we expect to find in Nature? We will find just what we take with us. After we have learned the principles of designing, we may then find suggestions in nature. Emerson says, "Though we travel the world over to find the beautiful, we must have it with us or we find it not".

Another directs us to the past for the principles of good design. So we continue to build Gothic churches and Queen Anne furniture. We have banks appearing like classic temples and preparatory schools which look like mediaeval castles. What we need is open minded men to design something to express our nation, our lives, and our times and not to copy the past. The Woolworth Building in New York is a good example of a beautiful modern structure which combines the old and the new. The designer borrowed from the past and yet created a design that answers every demand of a modern office building.

A great deal of the most interesting work left us from the past was designed more or less instinctively. The work was a response to the environment and needs of that time. With us designing is an intellectual process, self conscious, self critical at all times.

There are two phases of design—the aesthetic and the practical. The former deals with composition, refinement, enrichment, textures, color, and finish. The latter deals with utility, construction, tools, materials, and processes. To get good design in shopwork there must be no distinction between the aesthetic and the practical. The student must be an artist and yet he must be practical.

In order to plan a design successfully it is necessary to know what qualities a good industrial article should possess. Whether one is designing a bracelet,

a vase, or a footstool the article must meet three needs. First, it must be of service to the individual or the community; second, it must be made of durable material; third, it must possess beauty of proportion, outline, and color.

There are three divisions in the designing of a structure and its enrichment: first, Structural Design; second, Contour Enrichment; third, Surface Enrichment. Some objects are carried through all of these divisions and some through only one.

By structural design, we mean how high or how wide the object should be; where shall the shelves in a cupboard be placed or the arms on a chair? The knowledge of tools and materials influence the decision. A chair must be comfortable to sit in and strong also in all its parts. This necessitates certain construction elements: seat, legs, back, rungs and arms. The chair could have all these necessary features of construction and yet be uninteresting in design. To correct this the student must have good taste. This comes with training in designing and experience in the shop. By contour enrichment we mean the changing or the softening of certain portions of a plain structure. The Windsor chair might be used as an example compared with the straight lines of mission furniture. By surface enrichment we mean the application of design to the surface of the otherwise completed structure.

The observer proceeds from the impression of the whole to the study of the parts. The designer must put parts together with the effect of the whole in mind. It is necessary to think first, then, of our problem as a single mass or solid. Details, like handles, mirrors, and knobs, may project but are disregarded at first. This is called the Primary Mass. The primary mass is either horizontal or vertical according to service; examples of these are the davenport and the chair.

A primary mass should have the ratio of one to three, three to four, three to five, five to eight, seven to ten, or some proportion difficult for the eye to detect readily. Certain ratios, such as one to one, and one to two, are monotonous and not pleasing to the eye. There should be variety. The proportions should not be just enough off to appear a mistake, as two to two and one-eighth or three to three and one-fourth.

The first study should be the drawing showing a view of the most prominent surface of the problem. This view will be drawn in accordance with the demands of service, good proportions, and also the limitations of tools and materials. This is the major mass. Each of the other surfaces should be planned to harmonize with the first or primary mass.

The designing process must now be carried still further by dividing the horizontal or vertical primary mass into parts or divisions demanded by structural requirements or to improve the appearance of the object. The two simple types of division are produced by crossing the primary mass either horizontally or vertically.

Horizontal divisions have a tendency to give added length or width to an object while vertical divisions add height. Thus a building may be made to appear longer than it is by use of mouldings or other horizontal decorations. Ceilings may be apparently lifted or lowered by the use of borders, dropped ceilings, mouldings or the eliminations of these.

If the primary mass is divided into two horizontal parts, the dominant section must be in either the lower or upper section. Chart I illustrates this point in the drawing of the bowls. If the primary mass is divided into three horizontal divisions the dominance should be placed in the center section with varying widths in upper and lower thirds. This gives weight to the center and unity to the whole. In Chart No. I the dominant section is in the middle part of the table.

When necessary to divide the primary mass into more than three sections, the designers problem becomes more difficult. Design is apt to become so cut up that simplicity is lost. Unity is necessary. As a restriction against loss of

unity, it is necessary to group all minor horizontal divisions into a system of two or three larger horizontal divisions. This is a rule frequently neglected in the designing of candle-stick holders and lamp stands. This is illustrated in Chart II and Chart III.

Vertical lines are necessary to give needed vertical support. They increase the apparent height of an object. Builders of Gothic Cathedrals used the vertical lines repeatedly in buttresses, pinnacles and spires. This is a useful method of destroying the monotony of large unbroken surfaces such as a long fence or a wide buffet, or the front of a building. This is shown in Chart IV.

If a primary mass is divided into two vertical divisions, the divisions should be equal in area and similar in form. If the primary mass is divided into three vertical divisions, the center divisions should be the largest, with remaining divisions of equal size.

Appendages are members necessary to add to the primary mass, such as brackets, spouts, covers, handles, and mirrors. They should be designed in unity with and proper proportions to the vertical or horizontal character of the primary mass but subordinate to it. The appendage should have the appearance of flowing smoothly from the primary mass. It should, if possible, repeat some lines similar in character to those of the primary mass. The handle and spout in the teapot in Chart IV seem to grow right out of the sides of the teapot. Likewise do the braces on the side of the andiron.

Contour enrichment is the second major division of an industrial arts design. The average manual arts student designs furniture that is too heavy and clumsy. Contour enrichment adds grace, lightness, variety, unity, and strength. Chart V gives some examples. Contour enrichment that has a tendency to destroy structural lines or that does not increase the apparent beauty and strength of the object should be avoided. Shrubbery must not completely hide the foundation of a house. The house must have the appearance of resting on brick instead of on shrubs.

Many objectionable features are seen in the construction of furniture. Naturalistic design such as claw feet, lion heads and the human form are out of place. A bracket shaped like a 45-degree triangle appears clumsy but when it curves and gives a feeling of support it is pleasing to the eye. Brackets and mouldings act as links, assisting the eye to go gradually from a vertical surface to a horizontal surface without jumping. Whenever nature desires to support a weight, she is inclined to use a peculiar curve which consists of a long rather flat portion with a sudden turn at its end. This curve is called the Curve of Force and is very valuable in all forms of enrichment. This is shown in Chart VII.

The last major division of an industrial arts design is surface enrichment. Some objects as boxes, or tiles, are not suited to outline enrichment and yet have surfaces that may be decorated. Such enrichment increases the beauty and adds apparent strength to the structure.

The type and amount of ornament to be employed depends on the material and the use of the object. Utilitarian articles, such as a wooden mixing spoon or bowl, should not be carved. This would interfere with the proper cleansing of the article. A door handle should not be decorated so that it feels uncomfortable. Large projections on the back of a chair or the handle of a paper cutter are unpleasant and interfere with service. It is better to have articles too plain than to have offensive ornamentation. These are just a few of the many requirements one must have in mind before attempting to do industrial arts designing.

The experienced designer does not run over all these points in his mind each time he is making a design. He has studied them over and over until they have become a part of his subconsciousness. He can see when a design looks right or wrong at a glance, but as critic of a students work he is able afterwards to reason out why. This is the groundwork of what we call the

designers good taste. We need to instil the fundamental principles of good taste into the minds of our students with constant drill, many good object lessons, and with shop practice.

The most interesting designing was achieved when workmen were designers, and builders were achitects. The combination of the faculty to design and the skill to execute lends interesting and fascinating charm to primitive work. Conditions have changed. Workmen have ceased to be designers. Builders have ceased to be architects. This separation of art from industry has developed gradually.

"Speed" is the slogan now,—not "quality". Machines have taken the places of men with brains. Our printing presses insure speed and accuracy of production. But they do not approach the artistic standards set by the old printers who struggled with rude presses in the early days. Our power looms do not yield the beauty of the looms of old Persia, Sicily, and Italy. Our builders have perfected devices unknown to the masters of old. Yet we never cease to measure and photograph the old churches and palaces. For many centuries table glass was dull and made in graceful forms. Then the wheel came into play and cut and engraved glass became general. As skill increased taste degraded. The climax was reached when it became heavy and clumsy, unfit for table use. It is pleasing to note that this sort of glassware is now on the bargain table. Our public is demanding and getting something suited to the material of which it is made. It is also getting designs of today—not mere copies of the past. Our ordinary metal ware has all the life and feeling taken out of it by mechanical finish. Every sign of tool marks is removed. Designs of one past period or another are copied. The result is that of quick work instead of work of quality.

There is strong movement for better designs in furniture. Our magazines all have pages devoted to this subject. As a result our manufacturers are making bad and ill made copies of good designs in past periods. Machinery which enables manufacturers to produce two or three cabinets in the time formerly occupied in making one, is against quality and durability of the work.

Much more artistic work would be produced if designers and craftsmen were allowed to show their individuality in their work instead of being slaves of styles invented by people who lived under different conditions from those now prevailing.

With the organization of industry and the large use of machinery in production, it is no wonder that beauty has become divorced from use. The demand for beauty has resulted in meaningless and unrelated ornament. The designer and the craftsman have lost their personality. They are submerged in a business firm. We must have an intelligent and artistic interest in this work as well as a mechanical interest.

Art and industry are scarcely on speaking terms now. There is a lack of sympathy between the two. The artist deplores the lack of feeling and good taste on the part of the workman on whom he depends to execute his designs. The latter is impatient over the lack of practical knowledge shown by the artist. Both are right. What we need is studio trained craftsmen and shop trained artists.

In the drawing classes the student is given the theories governing line, form, and tone. He assimilates them until they become a part of him. He has formed good taste. He has learned to use his imagination. He has learned to criticise his own work and the work of others. In the manual training department he will receive the technical knowledge in the use of tools and materials.

With this happy union of knowldge, imagination, self-criticism and refinement with technical skill, we should be able to get good design in shopwork and to turn over into the industries of tomorrow, very skillful craftsmen.

The Manual Training Teacher and the General Continuation School Program in Illinois

By E. C. Phillips

Public schools in the United States were established before the country had any industries in the modern sense. They were set up to prepare young people for entrance to college, where the dominant purpose was to fit men for leadership in church and political life. The population at that time was largely rural, the industries were primitive and the rich resources of the country practically untouched. With the application to industry of steam power and the use in industrial processes of the discoveries of science, handwork rapidly gave place to machine work and the factory system of production brought about the concentration in cities of large numbers of workingmen. This transformation of a rural into an urban population, of home workers into factory workers, brought with it problems economic, social and educational which are yet far from solution. The public school system has developed rapidly, in keeping with the spirit of progress characteristic of the times and, within the past few weeks, a distinguished foreign educator, after spending several months in making a critical study of American educational institutions, pronounced our public schools "incomparably the greatest educational institution in existence." They have well preserved and built upon the sound principles which constitute their lasting foundation. Their phenomenal development within the present generation is a matter of just pride to all who are intimately acquainted with it.

It has been facetiously said that no advocate of vocational education can declare his convictions without first arraigning the public school system for its numerous shortcomings, and chiefly because it has failed to provide training whereby its graduates may earn a livelihood. I cannot agree that it is either necessary or good taste to assail the regular schools for failure to do this thing. They are rendering well their traditional and legitimate service to society. They were not established to provide vocational education. Founded upon classical standards, they have ever been administered for the benefit of those whose superior mental equipmnt and fortunate economic status guaranteed for them the leisure time and the funds with which to prepare for pursuing their training in higher institutions. It has been only within the past two or three decades that educators have been aroused to the necessity of providing equal opportunity for all the children who enter the primary grades of our schools. There has been a disposition to deplore the lack of appreciation on the part of those children who would not embrace the educational opportunities open to all. Studies of child psychology and of the mental and physical make-up of adolescents have revealed to us many of the reasons why two-thirds of all children leave school before completing the grammar grades. We now know that some are mentally incapable of progress beyond certain grades, we understand other types well enough to explain their distaste for school and their preference for the busy activities of an interesting world. We appreciate their impatience with abstract book learning and the restrictions of the school room, their desire for motor activity, the lure of wage earning and, in some cases, the economic necessity which forces upon them an early assumption of the responsibility for earning their own livelihood. We know, too, that no provision has been made whereby the public schools could furnish training in gainful pursuits for these children. Hence, we cannot justly blame the schools for not doing a work for which they have been provided no equipment and no funds.

The Smith-Hughes Act is the first provision that has been made for setting up a far-reaching program of vocational education in the United States. Its purpose is to provide for the cultivation of this neglected portion of the educational field, a portion outside the province of the regular schools, over which they have no jurisdiction and for which they, as yet, have no responsibility.

The Act is little known among the teachers in the regular schools and is understood practically not at all. It is but natural that those engaged in other kinds of educational endeavor should have only a very general interest in a new educational departure which is administered apart from their own organization and without articulation with it. But this fact lays upon those interested in, and responsible for, the success of the new enterprise an obligation to do missionary work in rightly informing other educational workers, and the public, what vocational education under the Federal law is and how it is administered. The Smith-Hughes law provides for the establishment, under public control, of instruction of less than college grade designed:

1. To meet the needs of persons over 14 years of age who are preparing for, or who have entered upon, the work of a trade or industrial pursuit.
2. To prepare these persons, through this instruction, for useful employment.
3. To devote at least one-half of the time of such instruction to practical work on a useful or productive basis.
4. To apply at least one-third of expended funds to part-time classes or schools for employed workers over 14 years of age.
5. To include in part-time instruction any subjects designed to enlarge the civic or vocational intelligence of workers between the ages of 14 and 16 years.

Part-time or continuation schools or classes are administered under the supervision of the State Board for Vocational Education in accordance with a plan formulated by the State Board and approved by the Federal Board for Vocational Education.

As I meet groups of teachers in different parts of the state I imagine at times that I detect among some of them a certain amount of apprehension lest the general continuation school may develop into a rival of the regular schools. It goes without saying that such an impression is erroneous and that it proceeds from an imperfect knowledge of the objectives of the continuation school. It is an essential part of the teacher-training activities carried on under the Smith-Hughes law to define clearly the aims of the continuation school, to show that it has an extensive field of its own in which to work, and that it does not overlap or infringe upon that of any other educational agency. And especially is it true that there is no conflict of aim, or competition in effort, between the continuation school and manual training. Rather is there a parallelism of objective through which each may supplement the other and by this means more completely meet the needs of boys both in and out of the regular schools. In order to show this it may be well to attempt a definition of the legitimate fields of each.

Manual training is a kind of elder brother to the general continuation school. Through manual training and its many contacts with life outside the four walls of the schools many leaders in vocational education had their first acquaintance with educational work. Through manual training and the equipment provided for it many of the earlier attempts at vocational training were made. And manual training men are the men who, during the past two decades, thought, planned and strove for legislative action which finally took form in the Smith-Hughes Act. The objectives of Manual Training are well defined. Dealing with boys who are yet in the regular schools, manual training aims:

1. To impart general, and not particular, knowledge of mechanical processes; appreciation and not special skills.
2. To handle tools and materials.
3. To plan and to do jobs, in order to gain a general knowledge of constructive work.
4. To sample, as it were, numerous manual activities—this sampling process serving as a guide to selection of a vocation.

5. To serve many recreational ends.
6. To set up ideals of accuracy, neatness and honesty in work.

And, in addition to its many general activities, manual training may be strongly prevocational in character. Many a boy has discovered the joys of constructive work through his first bungling attempts to make some useful article in the manual training shop. I think there are times when we are prone to lose sight of the gropings of the imagination, the vague, though boundless, aspirations of the growing boy. He is full of curiosity about the creative and constructive processes that he glimpses in the world about him. And who can measure the results of the kindly sympathy and the casual words of counsel dropped by the manual training instructor who, probably more than any other teacher, finds inherent in his daily occupations many avenues of approach to the real boy and his eager interests and enthusiasms? As a medium of self-expression, manual training may be made to serve broadly cultural ends. Frequently, too, it serves as a stabilizer for boys who find themselves out of harmony with the general scheme of things in the regular school. How often have we seen manual training employed as a safety valve through which pent-up energies and emotions found a useful outlet, resulting in the boy's working himself back to normal poise and a wholesome outlook upon the purpose of school life, after a revolt against the routine imposed upon him in the school.

The general continuation school, also, has a number of very definite objectives:

1. To serve the needs for vocational training of employed boys and girls between the ages of 14 and 16 years, who have been seaprated from the regular school to take their places, prematurely, in the industrial world.
2. To study the employment demands upon the employed minor, to supplement them, to endow them with more than casual significance, to magnify their truly educative values, to reveal shining opportunity to the youth where he, too often, sees naught but a round of daily drudgery to be endured solely for the sake of the pay envelope that comes at the end of the week.
3. To impart specific knowledge of one trade, instruction in definite tool processes laid out to lead the learner to expertness and skill.
4. To supplement mechanical instruction with broad essential related information calculated to make the boy a worker of broad intelligence, a good citizen, alive to, and able to share in, the civic and social ideals of the community of which he is a part.

Manual training is concerned with the boy who is content to remain in school, while the problem of the continuation school is the larger group who are more aggressive, independent, inclined to be restive under the restraint of school life, self-assertive and eager to interpret what they learn in terms of action.

Manual training and the general continuation school have each its own broad and proper field to serve. With objectives that are similar and, in many respects, almost identical, the two have, also, a broad ground upon which they may co-operate effectively. Manual training men have been unable to escape from industrial leadings and thus it happens that they, more than any other teachers, have an intelligent and sympathetic understanding of the necessity for the general continuation school and, as well, the meaning and purpose of vocational education. During recent years increasing numbers of men skilled in the trades have been drawn into the field of manual training teaching; and the record of Smith-Hughes work to date indicates that from the ranks of these successful teachers with a background of trade experience have come many of the successful teachers and administrators in the existing continuation school program.

Such manual training men have found in the continuation school a desirable field of effort and a more promising opportunity.

Manual training work is fortunate and effective when it reflects a measure of the dominant industrial activity of the community. The general continuation school is definitely committed to the policy of organizing its trade instruction to prepare for, and to supplement, the industrial employments of the community. Manual training touches the life of the boys of the regular schools who are destined for secondary school and college, many of whom will return with an equipment of technical training to become executives in local industries; while the continuation school is responsible for the training of those who will become operatives and foremen in the same industries. These two agencies, then, are responsible for the guidance and training in things vocational for all the youth of the community, and an effective discharge of the responsibility can best be accomplished through their united effort. Manual training is the logical ally of the continuation school and can promote its interests in ways direct and indirect:

1. By helping to convey to other teachers and to the public, as well, the need, the meaning and the methods of vocational education.
2. By making known the necessity of a methodology entirely different in manual instruction from that employed in academic subjects.
3. By making shopwork in the regular schools more definitely prevocational in character.
4. By offering, where feasible, counsel and guidance to boys who are concerned with selection of a vocation. This is a function that is shared by manual training and the continuation school, and what is effectively done by the one need not be repeated by the other.
5. By holding pupils in school over a longer period and by this much deferring decisions upon vocations until a more mature age when judgments may be based upon broader knowledge and experience.
6. By saving to the regular schools numbers of pupils who, as already mentioned, find in manual activities a better appreciation of the opportunities afforded in the schools and of the uses which they can make of them.
   That this process of self-discovery is not infrequent in the boy who has gone out from the school is indicated by the fact that records of some continuation schools reveal as many as 7% of their pupils who return to take up again their work in the regular schools.

The continuation schools are limited in their work by the lack of teachers trained for their special duties, who are acquainted with industrial activities in the environment of the school and the opportunities afforded for boys who must go to work. Teachers who have such training and such acquaintance with industry are the product of thoughtful study of vocational education and its purposes and of long experience in industrial contacts. Theirs is a clear perception of the reasonable ends of vocational education and without such an understanding the program is rubbish to the teacher steeped in the precedents of established school procedures. Vocational education is an urgent necessity of this day and time and it will survive in the continuation school or in some like agency which may be evolved from it. The continuation school must be shown to the public in its true character and possibilities, that its purposes and organization may not be misunderstood. This is an obligation that must be borne by those who best appreciate the necessity.

In a recently published book, "The Trend of American Education", Dean Russell of Teachers' College, states emphatically and without qualification that the future welfare of the United States depends upon the success with which this generation meets the need for vocational education. In emphasizing the gravity of this need and the possibilities of the new field of educational endeavor

which it opens, I have no intention to proselyte manual training teachers into continuation schools. Rather would I point the way that some have gone already to a field richer in opportunities, but fraught with more perplexing problems and greater discouragements. Could I summarize my thought in a sentence I would make it denote an appreciation of the larger aims of education for a class of children as yet largely neglected, a definition of responsibilities, limitations and mutual interdependence of manual training and the continuation school, and an exhortation to generous and aggressive co-operation in a worthy enterprise.

Standard Courses in Shopwork for High Schools

In a preliminary study of the task assigned to this committee it was decided to limit the report this year to shop courses in woodwork. The reasons for this are that all of the high schools offer woodwork and the most urgent need for standardization seems to be in this subject, and further, a study of this one problem appeared sufficiently important and difficult to justify concentrating our efforts on it.

It was thought that a survey of the general situation in the manual training departments of the state would be very helpful in determining the needs and possibilities of the shop courses now offered. Accordingly a questionnaire was formulated with considerable care and sent to the 221 high schools having one or more units of credit in manual training on the accredited list of the university. We received returns from one hundred and thirty six schools and we take this opportunity to thank the teachers in these schools for their promptness in replying and for their interest in our work. Your committee took advantage of the opportunity offered by the questionnaire to gather data not directly useful in its work but which would be of value to the conference. As is frequently the case in the use of the questionnaire, many of the replies could not be used because of an evident misunderstanding of the question or because of the ambiguous character of the answer. The summaries presented below give the more important results of the survey and will aid the conference in forming a fairly clear picture of the situation in the state as it affects the shop courses.

(1) One hundred and twenty nine (129) schools report 9455 students enrolled in courses in woodwork. The number of students per school ranges from 7 to 1,000. 63% of the schools report enrollments of less than 50 pupils in such courses, and 82% report enrollments of less than 100 pupils. The median number of pupils enrolled is 40.

(2) One hundred and twenty-one replies to the question as to whether the pupils in these courses had previously had courses in woodwork showed that 38% had not had any previous course.

(3) One hundred and twelve of 125 schools replying have all shop periods double periods.

(4) The types of work offered in the different grades and the number of offerings of each are as follows:

	Carpentry	Bench work	Cabinet work	turning	Pattern making
1st year	11	117	19	13	5
2nd year	11	15	50	52	15
3rd year	2	6	27	14	10
4th year	0	1	17	7	7

77% of the offerings in woodwork are in the first and second years.

(5) In replying to a question regarding the alternation of shop work with drawing

52 schools alternate shop with drawing by days.
16 " " " " " " weeks.
4 " " " " " " months.
21 " " " " " " semesters.
9 " " " " " " semi-semesters.
28 do not alternate shop and drawing. 68, or 52%, alternate more often than by months.

(6) In reply to the questions regarding provision of chairs and blackboard space for shop classes 75 report adequate black board space, 55 report that they do not have sufficient black boards; 65 report a sufficient number of chairs, 63 do not have enough chairs.

(7) In reply to the important question: "What percentage of your class time is given to discussions, recitations, demonstrations, etc.?" there were more giving 10% than any other amount, while the median for the group is 13.7%. The range was from 0% to 50%.

(8) To the question: "Do you require reference work in your shop courses," 82 replied yes, 46, no. Over ⅓ do not require any reference work.

(9) Of the replies in regard to salaries, 85 could be tabulated and the following appears: The range is from $1300 to $3400, the median amount being $2062.50.

(10) The figures on the preparation of teachers reveal the following interesting situation:

Academic Training Years	0	1	2	3	4	5	6	7	8	9	10	11	12	14	17	20	25
Beyond high schools	18	14	56	20	29	4	1	Average 2.3 years									
Professional training	20	13	72	15	13	0	0	Average 1.9 years									
Trade experience	61	22	19	5	6	3	3	(14 report various numbers of years from 7 to 30). Ave. 2.6 years. Median 1.25 years.									
Teaching experience Av. 4.9 years.	6	20	16	16	19	20	6	6	11	1	10	1	4	1	1	1	1

As was stated above, some of the data were not directly useful in our work on the course of study but it will be evident that all of the figures presented, indirectly affect our present problem, and are of considerable importance in revealing the great need for improvement in this field of high school work in Illinois.

Other recent studies and discussions indicate clearly that the older forms of shop courses are inadequate and cannot be justified in the light of present day needs and modern educational thought. The chief criticisms directed against our work are: that it is not clear in its aims, and it does not contain sufficient valuable educative content to justify the time and expense necessary to carry it on. In these days of careful economy and retrenchment in school expenditures those types of work in any given school system which are least obviously contributing to the recognized aims of public education are the first to be cut off. And it is a matter of serious alarm to your committee to notice how few of the teachers of shop work are definitely attempting to exploit the great educative possibilities in the shop courses. Too much attention is devoted to the mere making of things in the shop and too little attention is given to the rich content of valuable information to be found in a fully developed shop course.

It is, unfortunately, very difficult to secure any large agreement in a clear brief statement of the aim of shop work in the high school. The fact that this

may be said with equal force of most of the other high school courses does not help the situation. It is encouraging, however, to notice that progressive teachers are rapidly discarding the older aims which are based upon unsound theories of education. Since none of us any longer makes any claim for manual training as specific vocational training, our aims are to be found in the broader purposes of general education. We offer therefore for your consideration the following statements of definite aims of shop work in the high school.

1. To give a large amount of technical and occupational information relating to typical modern industries.

2. To give as large a variety of experiences as possible in modern industrial processes requiring manual skill and technical information.

3. To develop as far as possible initiative and appreciation in the field of the practical arts.

Without doubt in the realization of these three aims, many values of large importance will be found, but for the purposes of this report the *immediate, specific aims* are the only ones with which we are concerned.

Applying the three aims to high school courses in wood work we offer the following course outlines:

A One Year Course in Bench Woodwork

I. Not less than one third nor more than one half of the shop time to be given to class talks, class discussions, and reports with outside reference and essay work designed to require at least two hours a week. The subjects suggested for this study are:

1. American forestry methods and problems.
2. The manufacture of lumber.
3. Characteristics of common woods used in building and manufacturing.
4. A study of kinds and appropriate uses of wood finishes.
5. Manufacture of varnishes.
6. Principles of good design in wood structures.
7. Types of wood structures.
8. Grading and selection of lumber.
9. Study of wood fastenings.
10. The evolution of hand tools.
11. Manufacture of hand tools.
12. World lumber markets and transportation problems.
13. A study of the woodworking occupations. (If possible factory excursions should be made to supplement these class studies.)

II. A flexible series of project groups.

1. A group of simple unjoined pieces requiring the simpler tool processes, as squaring to dimensions, chamfering and boring. Suggested projects:
   - Game boards
   - Swing boards
   - Ironing boards
   - Bread boards
   - One-piece hat racks.

2. A group of simple projects requiring the use of the butt joint and nails and screws. Suggested projects:
   - Brackets
   - Nail and tool boxes
   - Feed troughs
   - Book shelves
   - Other such structures desired by students.

3. A group of projects involving the use of the dado and rabbet joints. Suggested projects:

   Costumers
   Book shelves
   Step ladders
   Taborets
   Stools
   Book racks
   Plate racks
   Any other such project needed or desired.

4. A group of cabinet pieces requiring some form of mortise-and-tenon joint and careful finish. Suggested projects:

   Book shelves
   Taborets
   Center tables
   Cabinets
   Book stands
   Hat and coat racks
   Other such pieces needed or desired.

5. A piece of furniture or other piece of cabinet work needed by the student for his own use or needed in the home. This piece to involve either an original design by the student or the modification by him of a design to meet his particular need. The work should, if practicable, involve the use of the glue joint and be very carefully finished. Suggested pieces: Well designed stands, small tables, seats, chairs, chests and dressers according to the ability of the child and the limitations of the equipment available.

   Note: All work should be done from carefully made drawings and only the best methods of work permitted. The student should be required to make out material bills for all material he uses.

   One or more reference texts should be used in connection with the shop work. Suggested texts: Griffith's "Correlated Courses in Woodwork and Mechanical Drawing", Worst's "Problems in Woodwork", Noyes "Handwork in Wood", and "Wood and Forest", Rusch and Corway, "Shopwork."

A One Year Course in Carpentry

I. Not less than one third nor more than one half of the shop time given to class talks, class discussions and reports on observations, with references and essays, requiring a minimum of two hours per week outside work. Suggested topics:

   1. The manufacture, grading and selection of lumber used in buildings.
   2. The manufacture and uses of cement.
   3. The manufacture and uses of brick.
   4. Names, advantages and uses of the various kinds of brick, and names and uses of different bonds found in common practice.
   5. Common types of houses with advantages of each.
   6. Names and uses of different kinds of roofs, and meaning of common architectural terms.
   7. Names of parts of frame structures.
   8. Study of structural details of frame buildings.
   9. Evolution of human shelter.
   10. Elementary study of bracing, and of wooden trusses.

11. A study of the occupations of carpentry, contracting, architecture, building material salesman, building inspector, concrete worker, electrician.
12. Building codes (local).

II. Shop work planned on project basis.
1. A group of projects involving measuring, sawing with hand saws, and nailing with common nails.

Suggested projects:

Chicken coops	Stilts	Bicycle racks
Dog kennels	Sleds	Shipping crates
Rabbit hutches	Jumping standards	Benches

2. A group of projects calling for hand planed boards and joined edges, using finishing nails.
Suggested projects:

Nail and tool boxes
Tool chests
Cases for camping trips
Door and window frames.

3. A group of projects involving problems of bracing and use of framing square.

Suggested projects:

Brackets	Roof trusses
Barn or garage doors	Small foot bridge
Gates	Playground equipment

4. A group of full scale building details.
Suggested projects:

Corner of house, floor and ceiling
Cornice detail
Portion of wall with opening, window or door.

5. A building project as of a complete hip roof, or small one room house, using shortened dimensions but full scale material. If possible an out-of-doors building project should be used.
One or more reference texts should be used with shop courses.
Suggested texts:

Agricultural Woodwork; Louis M. Roehl.
Carpentry; Griffith.
Shop Projects Based on Community Problems; Burton.
Problems in Farm Woodwork; Blackburn.
Constructive Carpentry; King.
Farm Shopwork; Brace and Wayne.

A Course in Cabinet Work for Second Year Students

I. Not less than one third nor more than one half the shop time to be given to class talks, discussions and reports with essays and reference work assigned to take a minimum of two hours per week outside work.
Suggested subjects for study:

1. Study of period-styles in furniture
2. Design of furniture
3. Types of cabinet construction

4. Wood finishes
5. Veneers and veneering
6. Upholstering
7. Hardware designs and applications
8. Development of woodworking machinery
9. Factory methods of furniture production
10. American furniture industry
11. Study of occupational data and opportunities in

    1. Cabinet making
    2. Furniture business
    3. Interior decoration
    4. Furniture manufacture.

II. Shop work involving construction of well designed pieces of furniture using machines as far as possible.

1. Group of simple pieces to give practice in using machines (if any) and planning sequence of operations.
   Suggested pieces:

Small tables	Drawing boards
Book shelves	Phone stands
Wall cabinets	Shelves, cabinets, tables needed in the shop

2. One or more large pieces designed and made by student with every possible use of jigs and machinery, and with much attention given to finish.

   Suggested pieces:

Dressing tables	Clothes chests	Book cases
Chairs	Drawing tables	Desks
Tables	China cabinets	

   Reference texts on construction, use of machinery, and on finish should be used. A large use of furniture catalogues is suggested.
   Suggested Texts:

   Handwork in Wood, Noyes
   Woodwork for Secondary Schools, Griffith.

A Course in Pattern-making

I. From one-third to one-half the time spent in discussions, reference work, essays and factory excursions.
   Suggested topics:

1. The pattern-making trade.
2. Materials used in pattern-making.
3. Foundry methods and materials.
4. History and uses of metal castings.
5. Various types of patterns.
6. Pattern and foundry terminology.
7. Pattern finishing and storage.
8. "Allowances" for different types of patterns and for different metals (Use of fillets, cores, skeleton patterns.)

II. A series of groups of projects.

1. A group of simple one-piece patterns involving core prints, and allowances of draft, shrinkage and finish.
2. A group of simple split patterns.
3. A group of more difficult split patterns.
4. A group of irregular parting patterns.
5. A group of built-up patterns.
6. A group of pipe fitting patterns.

Suggested references:

Text-books—

1. "Wood Pattern-making." H. T. Purfield, The Manual Arts Press, Peoria, Ill. 1920.
2. "Pattern-making." James Ritchy & W. W. Monroe, American Technical Society, Chicago, 1917.
3. "Pattern-making." Fred W. Turner & D. G. Town, John Wiley & Sons, Inc., New York, 1914.

General References—

1. "Pattern-making." Jos. A. Shelley, The Industrial Press, New York, 1920.
2. "Pattern-making." G. H. Willard & F. D. Crawshaw, Popular Mechanics Co., Chicago, 1910.
3. International Library of Technology, "Pattern-making", International Textbook Co., Scranton, Pa., 1903.
4. "American Pattern Shop Practice." H. J. McCaslin, The Frontier Co., Cleveland, O., 1907.
5. "The Pattern-maker's Assistant." Joshua Rose, D. Van Nostrand & Co., New York, 1892.
6. "Modern shop Practice," Vol. V, American Technical Society, Chicago, 1916.
7. "Wood Pattern-making." Ed Hanley.

The Determination of Objectives, and Methods of Teaching in the Field of Manual Arts

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I. Objectives

The teaching of the Manual Arts has been influenced by tradition and custom just as have many of the other school subjects. Bread boards, coat hangers and book racks are found in some form in a very large number of courses of study. They are not there because the boys always demand an opportunity to make them but rather because the teacher assigns them. The teacher in turn is carrying out the plans and purposes of his Supervisor, or possibly, the provisions of the High School Manual so that his boys and his school may be fully accredited when the High School Visitor appears. Too often what little thinking teachers and pupils do is concerned with the article to be made and not with the deeper and more fundamental reasons for which the subject is taught.

In recent years there has been a constantly increasing emphasis placed upon the need of determining objectives for education that will stand the test and meet the needs of present day society. We are no longer satisfied with traditional reasons and general statements. Associations, committees and individuals are applying themselves to the task of outlining new statements of purpose and objectives. These objectives are being stated in more specific terms; and the frequently formulated by other than Manual Arts and Vocational teachers, give a prominent place to the work we represent. The earlier attempts at stating objectives are usually too general to be of much assistance, but more recently we are finding a more detailed analysis which is more helpful. For example, the aim as stated by the British Labor Party reads thus: "A program of education which shall bring effectively within the reach not only of every boy and girl, but also of every adult citizen, all the training—physical, mental and moral, literary, technical and scientific—of which he is capable."

More recently Dr. Spaulding of Yale University has said that there are three minimum objectives of education:

1. Essential elementary knowledge, training and discipline.
2. Occupational efficiency.
3. Civic responsibility.

The Commission on Reorganization of Secondary Education appointed by the National Educational Association suggested seven objectives for all educational endeavors, namely: (1) Command of the fundamental processes, (2) Health, (3) Worthy home membership, (4) Citizenship, (5) Worthy use of leisure time, (6) Vocation, (7) Ethical character.

Each of these seems an attempt at defining the field of education and in each case it is evident that the Manual Arts may make some contribution. On the other hand, we feel the need of a still more detailed analysis and a more specific statement to define the limits to be reached by the Manual and Industrial Arts.

After a development extending over 40 years the manual activities carried on in our schools have necessarily changed somewhat. Experience and legislation have been potent factors. We frankly recognize that most of the work is not vocational, but primarily a part of a boy's general training. No matter what one's adult work experience may be, there is a good deal of what Dr. Bobbitt terms "unspecialized practical labor" to be done either by members of a family at home or at other places in the community. These activities call for abilities of many kinds and degrees, however, we may select those most essential to the individual, and for which special training is necessary.

Several basic assumptions will guide in the selection. These may be roughly grouped under two heads: (1) Consideration given to the child and his stage of learning, (2) The relative values of the abilities to be developed.

So far as the first point is concerned, we need to remember that the natural order of learning gives us several distinct phases of experience thru which every child should pass.

Arranging these in the historic pedagogical order we have. (1) The use and care of tools, (2) Processes of construction, (3) The designing and constructing of complete articles, (4) The repairing and taking care of articles made by others. Now the child is not especially interested in doing things after this fashion. He plays with toys that others have given him and as they wear out he tries to make adjustments and repairs. Along with this he begins simple construction of various articles. As he grows older he begins to see the necessity of specific modes of construction and of skillful use of tools. As a rule, we teachers have inverted the order. We insist upon correct tool use before we have any process of construction in mind. We teach "joints" before

we make any applications of them. We seldom include the repair of articles in our shop course and training in the wise selection and purchase is universally ignored.

Secondly, in the matter of relative values we do not agree, yet in the long run (1) it is better to be able to choose wisely as a consumer than making or repairing articles. (2) To operate, adjust, and repair those utensils and tools in common use is more essential than to make them. (3) The appreciation of a well designed, well constructed article is of more value to the majority of the people than so much skill in one field. (Do not misunderstand this to mean that too much emphasis has been placed upon the development of skill. No, our schools have not made boys skillful enough because the results attained have been secured by the wrong methods and at too great cost.) (4) Ability to cooperate with others in the making, operating or repairing activities of the school shop or in adult situations is often more valuable than merely "going it alone".

Recently the teachers of Los Angeles have been making a new curriculum under the guidance of expert leadership. As objectives for the practical arts for boys they adopted seven basal objectives. These are quoted from Educational Monograph No. 20—"Curriculum Making in Los Angeles".

The Objectives

1. Ability to perform unspecialized activities about the house, basement, garage, yard, garden, motor-car, etc.

2. Ability as consumer to judge the qualities and values of the products of specialized occupations.

3. Ability, disposition, and habit of observation and reading of things in the world of productive industry as enjoyable and fruitful leisure occupations.

4. A proportioned intellectual apprehension of the world of productive industry; or the specialized occupational groups which compose it; and of tools, machines, raw materials, processes, products, etc., involved. Ability to think in terms of the realities.

5. Ability to choose one's vocation.

6. A disposition and habit of being up and doing, independent, active and positive, in one's home life, and in one's affairs in general; not dependent upon others, passive and negative.

7. A disposition and habit of holding one's practical labors to reasonably high standards of performance; of always doing one's best. Dislike of things careless, faulty, incomplete, etc.

Space will not permit expanding these into the 162 specific items mentioned in the Monograph. But here we have a concrete illustration of very definite objectives which can be set up as desirable of attainment by all boys regardless of future means of making a living.

The setting of objectives for given vocations is in reality an easier task than that outlined above. The "job analysis" specialist has been in his glory ever since the Smith-Hughes Law was passed. The outlines published by the Federal Board, by State Boards and private publishers are all helpful to us in (1) indicating what abilities, skills, information or kinds of jobs each vocation demands and (2) as methods which may assist in making an analysis of problems in our own locality.

II. Methods of Teaching

The topic of Methods is sufficient to occupy far more time and space than can be devoted to it. Very briefly, let me state that Methods must grow out of a realization of (1) the objectives to be reached and (2) the particular method to be employed depends in any given instance upon the stage of development of the class or the individual.

We have noted that specific abilities *to do* are called for in the previously mentioned list. These abilities are dependent upon information about materials, processes, etc., and upon specific skills of greater or less degree. Life is too short to discover anew the arts and the sciences. For these and many other reasons the method of teaching by demonstration is the more effective for the beginner. This method is as old as the race. The teacher shows how to do a thing, he explains any obscure details, he answers questions and gives the principles. The pupil imitates what he has seen. His information guides and directs, or the teacher gives further instruction, until by consciously eliminating the incorrect and false, he stresses the correct and good until he acquires the specific degree of ability required.

Those abilities or resourcefulness, initiative and independence so much desired are strengthened thru the solving of many diverse problems such as arise in daily life. These should involve the method of having the pupil plan and make, or repair articles which he may be dealing with. Here the teacher arranges situations so that the pupil senses the difficulty, seeks its nature and location and then proceeds to set matters right.

Cooperation is never developed by the individualistic schemes of many of our shop teachers. Modern industry is a vast cooperative enterprise and ability to choose a vocation in part comes only thru working with others. We need to arrange for much team-work in our shops to cultivate the spirit so essential for a good foot-ball team—that the eleven men play as one man. While the teacher plans and supervises, pupils must assume the attitudes and responsibilities of so doing the assigned or selected portion of the job that the finished result is a credit to all.

The higher appreciation of articles well made, beautiful and appropriate can not be equally developed in all pupils. Yet some there are whose teachers will so instruct that pupils come to sense the fact that good design always grows out of an attempt to meet a felt need and then to make an article not only serviceable but a delight to the senses as well.

The most difficult task is to use such methods as will develop the ability to select one's own vocation. A vocation is possibly more the result of choice and circumstance, and acquaintance thru reading, observation and some work experiences rather than any specific method of teaching. If our course of study is rich in the variety of experiences it affords, if our methods of proceedure are faithful portrayals of industrial practice and finally, if wisely directed reading, observation and friendly counsel be made use of, then we may hope to aid in the delicate task of choosing a vocation.

The best teacher is he who has the goal in mind so definitely that he selects materials, tools and methods of teaching so each may most effectively carry the learner in the desired direction.

Dean Siepert's address was followed by a discussion of Manual Arts as a Business Asset, by F. D. Crawshaw of Peoria. Following is a brief outline of his talk:

1. My proposition regarding Manual Arts work as an educational means, versus a vocational means in public schools, except in technical, trade and vocational schools is, Manual Arts, perhaps no more than any other subject in the curriculum, should be regarded as a part and parcel of general training.

2. Manual Arts is a direct business asset for future occupational work because it requires the application of "thinking in doing" and

in "visualizing", naturally requiring a reasoning power which culminates in the forming of judgments.

3. Manual Arts being a motor-mental subject, the question arises as to the emphasis on each of these elements. My conviction is that the average teacher naturally, but wrongly, permits himself to emphasize the work of the pupil in the motor elmeent rather than the mental element. As a matter of fact the great majority of pupils will accept life occupational work which requires the mental development rather than the motor development in so far as the application of either is made in any particular occupation. While the teacher places emphasis on mechanical details, although "what is worth doing, is worth doing well", he should place the main emphasis upon the "big idea" in Manual Arts, which is analyzing a situation, determining its component parts and then by the proper synthetic method rearranging these elements to solve a particular problem or reach a particular goal. This procedure does not emphasize routine methods of handling tools and fashioning materials. It does, however, develop reason and judgment, the two principal characteristics which, perhaps, are more needed in business than any others.

4. The teacher's attitude, naturally commanding, tends to make pupils subservient followers rather than leaders. They should be taught to consider problems as though they were initiating them, not withstanding the fact that the teacher in his wisdom, directly presupposes and predetermines the conclusions which the pupil will reach. When these conclusions are reached, however, the pupil has what we all have in life, if we are to carry responsibilities, namely, the satisfaction of achievement. The teacher on the other hand has accomplished his objective, namely, that of reaching a result by making the pupil an initiator of the plan.

5. The school and the home are to be regarded quite as much an integral part of life as any of the occupational work of those of us who have reached our majority and are placed in our occupational work. Manual Arts offers as large an opportunity as any other subject in the school curriculum for developing pupils by the natural process of "give and take" where the teacher is merely a director, and the pupil a solver of problems with all the elements in each and every situation which he faces, known.

Standards for Mechanical Drawing in High Schools

At our Conference of last year there were given three papers on Mechanical Drawing; its value, and the need of standardizing its content and methods of instruction.

And at that meeting a committee was elected to take this subject in hand more fully; to make a thorough investigation and study of the matter, and to make at this present meeting of the Conference a report on "Some Workable Standards for Mechanical Drawing in High Schools."

This committee consisted of John H. Sharda, West Frankfort, chairman; A. B. McCall, Springfield, and H. H. Hawkins, Danville. Although the members of the committee were, because of distance apart, not able to meet as frequently as they would have liked to do, they nevertheless pursued the study of their problem in close cooperation. And where they made independent investigation into certain phases of the subject, they invariably arrived at very similar conclusions.

Your committee begs to report that investigations have been made over practically the whole United States from east to west, and from north to south. We have considered the matter from the view points of the manufacturer and the industries, and we have considered it from the view point of the schools. We have considered the needs and demands of our universities and technical schools, and we have not overlooked that student who will never see college.

Some Startling Facts

And from these investigations we have arrived at a number of facts and conclusions that are quite startling, to say the least.

Practically every state in the union is facing the same problem that we are today. They would all eagerly welcome a solution. No states seem to have a sound uniformity of content in mechanical drawing courses. If any attempts are made at standardizing, those attempts seem very weak, vague and indefinite. Rarely are two cities found that have the same content of courses. Practically no two have the same methods of instruction. The technical schools and the universities complain that, although our students have apparently done considerable drawing, they don't understand what it is about. They do not seem to have acquired that insight, understanding, thinking power, which is of prime importance. Since our drawing courses vary so exceedingly, these universities and technical schools are absolutely "up in the air" as regards knowing upon what they may depend. And for this very reason these same higher institutions are more or less reluctant to allow entrance credits for a subject which is so indefinite. Our manufacturing industries too often find our mechanical drawing products very unsatisfactory. Too often their needs must take our so-called draftsman, and "re-train" him. The commercial and industrial methods and customs do not "connect up" with those of our high schools. Or, perhaps expressing it better, we do not "connect up" with them.

Our Subject and Our Problem

The above mentioned facts and conclusions then indicate very clearly our subject and our problem. Mechanical drawing is a subject of tremendous potential value. But it must function properly. To do this, it is very necessary that we understand it properly. We must have, furthermore, a reasonable uniformity of content in our courses. There must be a standardizing of final results. To secure this, there must be clearly defined principles of teaching. We must teach according to the needs and the customs of our manufacturing and building industries. Our teaching must prepare for the needs and demands of our higher technical institutions. In short, we must set workable standards for mechanical drawing; standards that aim at the proper functioning of the subject. And we must make these standards so practicable and so well defined that you can take them with you for immediate application. It has been our earnest desire so to do, in order that these standards may begin at once to establish our subject in its proper value, in our high school curriculum.

The Real Significance of Mechanical Drawing—A Vision

We usually think of mechanical drawing as a subject practical, vocational; a preparation for engineering, architecture and general lines of industry and manufacture. But we must not overlook the fact that our subject in a larger sense must justify its existence from another viewpoint as well. We say "in a larger sense" because, to be truly a high school subject, any study must have more than merely a utility value or a vocational value. If education is the full development of the individual, it follows that a high school subject is of larger value if it does more than only to train in knowledge or technical skill.

But when we assume as the general aim and end of mechanical drawing the following objectives:

1. A training in creative imagination,
2. An ability to think in three dimensions,
3. Ability to visualize quickly and accurately,
4. The forming of clear mental images,
5. A thorough acquaintance with the great industrial language of the world,
6. A technical skill to express one's self in that great language.
7. A sound elementary preparation for the needs of the manufacturing or structural industries,
8. The laying of a sound and well defined foundation upon which our engineering and technical schools may build,
9. The forming of a great stock of ideas conducive to a better understanding of the industrial world,

then, surely, our subject needs no further justification.

Our high school curriculum is composed of courses that are selected for their mental training, mental discipline, cultural value, informational value, technical value. They must, in some manner, contribute toward the development of the mental equipment of the student. And the student should be a "larger" individual, more competent mentally and morally, because of having pursued such a study or such a course.

If then, on the basis of the objectives previously mentioned, it is demonstrated that mechanical drawing would satisfy the conditions implied in the foregoing discussion,—that is, if it were taught properly,—then it is likewise demonstrated that the subject is justly entitled to an important place in the high schools of our state.

Shaping Our Work

If our vision is correct, and we believe that it is; and if such objectives are to be attained, there should be some well defined milestones along the way. And the road to those milestones must be paved with materials of standard proportions and quality. Furthermore, the road bed must be kept constantly in good repair.

And when our classes travel this road, they should arrive at a given milestone in a given time. Even though they might be permitted to make short side trips along the way, we must make certain that they travel the highway, and that they arrive at the stations "on time."

Mechanical drawing is a language. It is the great language of industry and manufacture. Everything we have about us; our buildings and our bridges, our houses and our streets, our water works and our sewer systems, our electric light systems, our machinery and our furniture, our big engineering

projects, our mines and our canals, the dishes from which we eat, the stoves upon which we cook, the very clothing that we wear,—all these had to be expressed in the great language of draftsmanship; aye, their very existence depended upon this language.

Now a language should be taught according to certain well defined principles. Just so, this big industrial, international language must be taught by certain well defined principles. We must know the parts of speech of that language, and we must learn to express ourselves in that language. We must bear in mind that there are both correct and incorrect forms of expression. We must realize that no language can be mastered by merely copying page after page of that language. You all realize very well that no one could or would learn Spanish by copying chapter after chapter from some Spanish book. Yet some of you are doubtless guilty of assuming that the great language of construction and industry can be readily learned by merely copying plate after plate of drawing.

Content of Various Courses and Methods of Approach

From an extensive amount of investigation, both by personal visits and by correspondence reaching over practically the entire United States, we find the following peculiarities in the content of various courses offered:

1. Some are merely a set of plates to be copied.
2. Some devote all time to laboratory work.
3. Some begin with geometrical constructions and dead technicalities.
4. Some discard theory altogether and begin work with large detail drawing.
5. Some use considerable theory, require taking notes, but make little application of these theories.
6. Some advocate an extensive use of models, while others discard models entirely.
7. Some consume two thirds of a year with sheet metal drafting, when probably not a single member of the class will ever use it.
8. Some, in the drawing done by their class in woodworking, require drawings of a lot of iron objects which the student has never seen and which he does not understand.

The text books on the market today also show the same variety of content and method of approach. Doubtless it is because of this fact, that teachers have inaugurated such a heterogeneous collections of drawing courses. There is only one instance of uniformity in the text books offered today, apparently, and this uniformity becomes a monotony. After each author has aired his individual theories on the subject, he almost invariably offers a series of problems on models so antique and so impracticable, that although they would be the envy of a junk man, they have no live meaning to the student.

And now, out of this miscellaneous material that we find, what shall we select and what shall we build? We must bear in mind two things. The new structure that we desire to erect must comply with the requirements of two big objectives:

a—It must justify its worth on three points:

1. Information
2. Mental training
3. Cultural value

b—It must prepare for practicable usefulness, whether applied at home or toward higher institutions.

Proposed Content

Comes now the problem of content of courses in the different years:
a—In connection with Manual Training wood work;
b—As offered in Mechanical Drawing I, or first year's work as an independent subject.
c—As offered in Mechanical Drawing II, or second year's work.

With regard to division "a", drawing in connection with shop wood work, we shall take note of the following conditions:

There are thirty-six weeks in a school year.

If we devote an average of two days per week to shop drawings, there would be a total of seventy two days. This committee believes that for this period of time, twenty five plates is a sufficient number. We recommend that these plates be of some standard size, saye 11x15 inches, or one fourth of an "Imperial" sheet. These plates should be closely related to what the boy does or will do in the shop. The technique and lettering should be reasonably neat, but it must be borne in mind that this drawing is only in conjunction with shop work, and is not an end in itself.

We would especially emphasize that the work given is to be closely related to the shop work. It should consist of drawings of woodwork; objects that the boy understands; objects which he may make some day. To us it seems extreme folly to have a boy today working on a book case or pedestal, and tomorrow to have him attempt to draw a gland or lap strap about which he has absolutely no conception whatever.

We would further recommend that, of the twenty five plates allotted to this year, 60 per cent, or 15 plates, consist of orthographic projections or common working drawings; and 20 per cent, or 5 plates to oblique drawings; and 20 per cent, or 5 plates to isometric and cabinet drawings. This completes the twenty five plates.

Along with this there should be a small amount of free hand sketching. This latter is a valuable ability for the student to have and to practice. He may see some object which appeals to his taste or inclination. It may be in a store, in a catalog, or in some book or magazine. Given the ability to sketch it, he can carry the design with him to school and make a drawing of it. Designs will begin to appeal to him; lines and proportions will be observed; we are cultivating something in that boys' mind which means a valuable asset to him, yet we do so without apparently teaching.

Mechanical Drawing I

In this year's work, which we shall interpret to mean the first year of mechanical drawing as a separate subject, there are several other conditions and obligations to be considered. Our universities and technical schools have certain needs and certain requirements. We must aim to supply them with what they want and can use. We must consider the needs of the great industrial world; and we must meet that need. Then there are always some students who can not continue their education, and who hope to be able to apply what they have learned; to apply it toward earning their living.

Truly a big problem. To come as near as possible to meeting these requirements we suggest that the work of this year be arranged in six groups as follows:

Group I.

To consist of all general preliminaries in technique, including lines, circles, curves, angles, plane figures, definitions, scaling, etc.

Four plates allotted to this group.

Group II.

To consist of the revolution of solids in different positions and at various angles, developing the ideas and methods in projection of various views.

Approximately fifteen plates allotted to this group.

Group III.

To consist of working drawings and orthographic projections. Some instructors might suggest placing this group before group two, but after studying the matter from practical observation for a long time, we conclude that the student has a more competent grasp of ideas if he has had group two, first. The objects to be drawn in this group should be both of wood and of iron; should be of a kind that are understood; should be modern and related to modern industry; should be selected with a view of arousing interest and paving the way for larger things to follow. Models might well be used at times, tho by no means for every problem.

Some twelve plates allotted to this group.

Group IV.

To consist of fairly simple oblique, isometric, and cabinet drawings.

Five plates allotted to this group.

Group V.

To include intersections and development of surfaces in an elementary form.

Only three plates allotted to this group.

Group VI.

To consist of freehand sketching of objects in different positions. A plate may easily have four or more views of the same object or it may contain views of four or more different objects.

Two plates allotted to this group.

For general characteristics, qualities, and points to be observed in this whole year's work we would make the following suggestions for requirements:

That standard size plates may be used, preferably on sheets of paper twelve by eighteen inches.

That standard lettering be rigidly insisted upon, qualifying both in neatness and in rapidity, and that the slant Gothic alphabet be given preference. The trend of the industrial world seems to be toward this style of lettering.

The standard thicknesses of border lines, visible and invisible object lines, center lines, projection lines and dimension lines, etc., be taught and rigorously demanded.

That a properly logical order of procedure relative to rapid lay-out of border rectangles, lettering strip, lay-out of views and order of penciling be so thoroughly taught that there will be a rapid formation of proper habits in technique.

That inking of *all* drawings is not at all required; in fact that it is not wise. Of course students must be required to develop a satisfactory degree of skill in inking, but when this skill is attained, a great deal of valuable time is consumed by having students required to ink each and every plate.

We recommend that, when students have once attained a satisfactory skill in the technique of inking, they be frequently required to rapidly block out a plate with a 5H pencil, after which they should complete the work with, say a 2H pencil, just as they would with their ruling pen. They should be taught to produce a drawing of practically the same degree of neatness as an inked drawing. We would like to have drawing teachers take note that in commercial drafting-room practice the great majority of drawings are never inked. They are penciled in with a rather soft pencil, say a 2H, all unnecessary lines are

erased, perhaps, and a tracing is then made of the drawing. In fact, even the tracings made, when made upon tracing paper, are in the majority of cases also made with soft pencil instead of with ink. The reason is very apparent. Time is saved, the work done is fully as neat, and blue printing is no less successful. Only when tracings are made upon tracing cloth, is ink used in many drafting offices.

Mechanical Drawing II

This is not to be interpreted as the year's work following the drawing with woodwork, but is the second year's work in mechanical drawing as an independent subject.

Just as in the previous year, we would arrange the work in groups, and again we would suggest six groups. And as a general quality of the work of this year we shall expect a finer and more finished degree of technique than we did in the first year's work.

Group I.

To consist of intersections, development of surfaces, sheet metal drafting. Six plates allotted to this group.

Group II.

To consist of fundamental geometrical problems and constructions, such as the instructor knows to be later needed by the student when the work is continued.

Five plates are suggested as a proper allotment for this group.

(Groups I and II may be exchanged.)

Group III.

(a) To include cabinet making drawings, both detail and assembly; both orthographic and oblique or cabinet projections..

Six plates allotted to this division.

(b) Also to include isometric drawings of standard shapes and figures.

Five plates allotted to this division.

Group IV.

To consist of drawings of standard machine parts and conventions. It is earnestly urged that parts selected be standard parts of modern machinery; parts that are observed very commonly. Models should be used for some of the drawings. Conventions taught should be selected from standard hand books on machinery. The student is building his machine vocabulary, and only correct forms must be allowed.

Some eight plates should be allotted to the group.

Group V.

This group to include screws and screw threads, with the fundamental principles concerning screws. The instructor should plan such work as in his judgment would lay the proper foundation for future work. We would emphasize the conventional representations, and we would caution against too much tedious work on spirals, etc., which any standard handbook on machinery has already conventionalized and tabulated.

Some three plates suggested for this group.

Group VI.

In our last and final group we would include a selection of machine assembly drawings. We can now draw upon, and appeal to, the fundamentals and principles learned thus far in the course. It is well to have this group serve as a culmination and as a final application of the knowledge and skill gained by the student.

Some three plates to be made in this group.

Conclusion

Now to recapitulate briefly. We have discussed standards and standardizing. What shall we understand by "standards"? Do we mean standards of courses, standards of teaching, standards of ability or standards of results? Is it not true that these are all inter-related and that each depends on the others? We have discussed mile stones and objectives; we have proposed contents of courses. It is our opinion that the following stand before us clearly as essentials.

(a) We should have a clear and well defined idea of what our subject is, and of the ends toward which we strive.

(b) We must have a well defined uniformity of content in our courses, yet provide reasonable flexibility to meet local conditions.

(c) There should be some clear cut principles to govern and guide our teaching. Originality and initiative is not to be suppressd, but the general frame work of our scheme of instruction must be pedagogically sound.

(d) There should be a fair and reasonable degree of uniformity in the results that we secure. It is absolutely necessary that those results are what is needed by the industrial world and by our technical institutions. It is just as necessary that those results are uniform.

If we can get away from the conglomerate mass of variegated courses, methods and texts; if we can shape our work along certain well defined lines; if we can fix the amount of that work so that it can reasonably be accomplished; if the high schools of the state can and will make their courses reasonably uniform and similar; and if the results secured will also be uniform and of standard quality; then at last will mechanical drawing come into its own.

It now remains for the teachers of drawing throughout the state to give us their constructive criticism and their cooperation. And if this last can be secured; if we can unitedly "put it over", we shall have succeeded, in a measure at least, in doing what many states would like to do but which none have done as yet.

12. MATHEMATICS SECTION

Morning Session

The meeting of the Mathematics Section was called to order by Mr. W. T. Felts of Carbondale and a secretary pro tem, Miss Harriet Batterton, University of Illinois High School, appointed.

"Unified Mathematics" was discussed in a paper by Prof. E. R. Breslich of the University of Chicago. The synopsis of this paper follows:

Unified Mathematics

E. R. Breslich, Chicago

Need for New Subject Matter and Methods. Dissatisfaction with the traditional courses and methods is one of the striking features of education. In mathematics the teachers and their leaders have long recognized the necessity of making certain reforms. Some of these have been made and have influenced the teaching of mathematics throughout the world. The following are some of the criticisms calling for a reorganization of the traditional curriculum in mathematics.

Algebra and geometry contain many abstractions that are too difficult for the beginner.

The applications do not interest the pupil because they lie outside of his experience.

The major part of the content is a matter of symbols, dogmatic definitions, arbitrary rules, and meaningless manipulations.

The subject matter is not adapted to the pupil's mental ability.

Emphasis in the arrangement is on the logical rather than on the psychological.

Entrance examinations and remote needs, rather than real and immediate needs have influenced the selection of material.

The subject matter has little social value.

The pupil who takes only one year of mathematics does not receive training in space intuition, since that one unit must necessarily be algebra.

American pupils lose time when compared with pupils of the schools of Europe.

Pupils are not able to use their mathematics in other subjects nor in advanced courses.

Important Reform Movements. Among the movements to improve conditions the following are the most important.

The Perry movement which places strong emphasis on the practical side of mathematics.

The movement for concrete mathematics urging the necessity of replacing the abstract by the concrete.

The Klein movement which makes the function concept the unifying idea in mathematics.

The Tannery-Borel movement, aiming to replace objectional proofs by bringing in principles of analytics and elementary notions of calculus.

The movement for correlation, which is the logical outcome of the preceding movements and which aims to find a real solution for all the objectionable features which the preceding movements aimed to eliminate.

Experimentation with curriculum construction started in the School of Education in 1903. The socalled "parallel plan" of teaching algebra and geometry in parallel courses was tried first and was found unsatisfactory. From this experiment much was learned as to the possibilities of correlating these subjects. The outcome of this has been a series of four textbooks, each intended for one year, including all the secondary mathematics up to the calculus. Some of the fundamental notions of calculus are used in the fourth course.

Historical considerations show that present traditional high school courses in algebra and geometry are not the outcome of a broad, well-conceived plan, but an historical accident. This partly explains why they do not provide suitable material for pupils of the age of early adolescence. A curriculum in unified mathematics, offers excellent adaptability to the pupil's mental development and needs. The following aims are being accomplished:

The method is well adapted to fit the subject to the needs of the pupil.

It facilitates a psychological arrangement of subject matter.

It satisfies the demand for concrete mathematics.

Excessive formalism is reduced.

It allows sufficient time to develop mathematical abilities.

Needless reviews are avoided.

Correlation furnishes motives for better methods and for further study of mathematics.

The function concept penetrates the whole course.

Pupils gain power by learning to attack mathematical problems by various methods.

Correlation solves the problem of gaining time for the pupil.

Results Attained. The superiority of unified mathematics over the traditional courses may be studied by means of results attained by pupils. Since the introduction of unified courses in the University High School the percentage of failures and withdrawals in the department of mathematics not only decreased annually, but it decreased more rapidly for mathematics than for the school.

Correlation has resulted in a considerable saving of time. Pupils now cover in three years as much work as is done in three and one-half years in the traditional courses. During 1919-20 and 1920-21, in the University of Chicago, University High School graduates taking courses in mathematics did work above the average of the classes. This was the case even when they were below the average in the other subjects taken at the same time. Those pupils who took calculus as their first course in the freshman year, have done very good work in this subject, receiving grades A and B, but no lower.

In other colleges the graduates of the University High School show similar superiority in mathematics. Fourteen schools replied to a letter asking for the grades of the students in mathematics, eight of the thirty students concerned stood below the average of their classes in the other subjects taken at the same time, six had the same grade as the average, and sixteen ranked above. The distribution of grades in mathematics is given in the following table:

Grades	A	B	C	D	F
No. of Students	6	11	13	0	0

A preliminary summary of a similar study carried on for students who have studied correlated mathematics in other schools, seems to indicate superiority in mathematics.

The general tendency in education is to reduce the mathematics required for graduation to one year. This year should be planned not only for those who go on with mathematics but also for those who discontinue the study. Unification of mathematical subjects has solved this problem. One year of mathematics tests the pupil's inclinations. This year makes him acquainted with various phases of the subject. Those who decide to continue enter the second course without loss of time or training, since each of the following courses makes use of, and is based on, the subject matter acquired in the preceding course.

The discussion of the paper was led by Mr. W. F. Coolidge of Granite City and continued by a general discussion:

Mr. Coolidge: Unified Mathematics is splendid in theory, and in practice in special cases, but is it practicable for the average high school without state-wide provision for it?

Mr. Harvey W. Chandler, Rockford, continued the discussion as follows:

Unified Mathematics has its strong exponents and its vociferous opponents. One of the latter even has gone so far as to say that Correlated Mathematics is a three ring circus which does not correlate! At any rate something has to be done to rectify matters mathematical. Since Mathematics teachers commonly fail a large percent of their students we are put on the defensive. "What are we going to do about it?" We have been attacked because the materials we have taught are not capable of application on the part of the pupils. Rugg & Clark of our own fold says our "traditional presentation has been logical, but not psychological." Our course is broken into horizontal cross section chunks of subject matter, whose names imply distinct differences of content. We have been more concerned with cutting up our subject matter into a graded scheme for the schools than with seeking out the notions and operations which are needed to facilitate thinking about quantitative things. They claim that our courses need an overhauling from the standpoint of a psychologically and sequentially worked out scheme.

If this be our issue it would seem that we would have to break away from tradition and do pioneer work in the Mathematical field. This is the step the United Mathematics has taken. Let us turn to a study of Mr. Breslich's Texts since he was one of the early leaders in the Unified Mathematics movement. In his First Year Mathematics he says the traditional ninth grade Algebra is not satisfactory, for the pupil finds it difficult, and hence he goes no further in Secondary Mathematics. The author thinks that Algebra and Geometry supplement each other, therefore teach them together. Geometry is used to illustrate algebraic processes. Since the number of Mathematics courses is being continually reduced for High School graduation, he favors a presentation of the informal Geometry along with Algebra so that the pupils will not be lacking in geometrical concepts. Rugg and Clark say that soon 9th year mathematics will be the last that is required. If this be true then there is strong argument for Mr. Breslich's opinion. In this course the fundamental facts of Trigonometry are given because of their inherent appeal as well as their usefulness as aids in solving problems. Induction, avoidance of excessive formalism, algebra as a clarifying instrument, enriches program content, and interest on the part of the pupils to the extent of further delving into the subject—all of these are among the things which the author feels are advances over the traditional types of presentation. He thinks that correlation will both simplify and deepen the student's comprehension of quantity. Personally I can see no reason why informal methods of proof in geometry, and geometry to establish a concrete basis for abstract discussions is not attainable in ninth grade mathematics.

The second year course presents formal methods in geometry taught by the analytic method. Algebra is carried as far as many processes commonly presented in intermediate algebra. Trigonometric functions are used in proving geometric theorems, solid geometry is taught in connection with plain geometry and arithmetic is reviewed.

Mr. Breslich's third year mathematics is algebra and trigonometry mainly, solid geometry is completed, and such topics as logarithms, tables, slide rules, and graphs are taught. Functions such as series, fractions, variation and exponents are studied. Trigonometric functions are developed including functions of the double and half angle. Field work is given with the transit and measuring tape. Equations are given attention with processes represented concretely. These three books represent the same amount of work as is commonly taught in the usual traditional way in 3½ years but the former require only three years for their completion. Therefore they point to an elimination of one half year of wasted time. As to the fourth year book let us quote from the book itself: "Thru the economies effected by treating mathematics in combinations this four year course is able to cover in the usual time allotted to high school mathematics, in addition to the customary high school courses, plane analytics and college algebra with considerable work in differential calculus; and also is able to give development in a natural way of the important concepts of functional dependence.

Let us turn now to the question of Junior Mathematics which is one of the most burning topics of the educational field. Certainly here is a fine place in which to have correlated mathematics. Much arithmetic should be removed for it is either antiquated or else does not fit in with the socializing movement. Such things as partial payments should be eliminated. Arithmetic, algebra, geometry and trigonometry should be taught together at least during the first two years of the junior high school. The geometry should be intuitive. Algebra should be concerned mainly with the formula, graphs, and the equation as a problem solving tool. Numerical trigonometry should be introduced: (1) because of the insight it gives into mathematical methods; (2) because it is not difficult and (3) because it will arouse the interests of the pupils. Great attention should be given to concrete or verbal problems with continual attention to the practical material available. The National Committee on Mathematical Re-

quirements suggests a ratio of two thirds algebra to one third geometry for the ninth grade, and no less an authority than Miss Gugle places some formal demonstrative geometry at the end of her third year Junior mathematics. The geometry in the ninth grade can be made to center around indirect measurement and similarity, and such relations as the theorem of Pythagoras, parallels and perpendiculars, quadrilaterals and simple construction.

It may be said that one very good reason for combined mathematics is to be found in the functional idea. It is very desirable that there be growth in the mind of the pupil of the idea of relationship between quantities of either an arithmetical or geometric character. Certainly a pupil who has been taught to be on the lookout for dependence of quantities can think more clearly when he has to deal with problems in real life, whether he takes further work in mathematics or not. The teacher does not need to teach the definition of function or even mention the word "function" but should never let an instance pass, where one quantity is related to another, without calling attention to the fact and trying to have the student see how the relations work. What could be better for teaching the functional idea than correlated mathematics? In algebra we have graphs and such formulae as interest equals PRT, or Fahrenheit equals 32 degrees plus nine-fifths centigrad. Then there are tables of squares involving y equals x square. All of these lend material for teaching functional dependence. In geometry the theorems of congruence, inequalities and proportionality are available. Every trigonometric formula may be discussed from the functional standpoint; we also have such questions as: "Does the sine of an angle increase or decrease as the angle changes from 0 degrees to 90 degrees, or if an angle is doubled, does the sine of the angle double?" Since functional relationship is so apparent in the life of the world its teaching at least as a by-product seems a necessity. If we then take as a premise the belief that functional dependence is worthy of notice we have a strong argument for correlation of mathematics. For in correlated mathematics the functional relations will be many times illuminated because of increased and continual contact with all types of variables.

I wish to speak of another kind of unification which seems to me to be of importance. It has been found that science work should be more closely joined to mathematics. Some of the school authorities have even gone so far as to say that junior mathematics is going to undergo a change so that it will be taught say three days a week with absolute correlation between it and the general science courses. The head of the science department in Rockford suggested to me that there were a number of ways in which mathematics and general science could be related. She thought we should give greater attention to graphical representation. Scale drawings, bar graphs, temperature graphs, graphs showing forest preservation, humidity and heating problems, graphs showing mortality rates; all these are available for mathematical study. I think she has struck a vital point. Why cannot we present to our pupils this practical material which will be of interest to them, while we are at the same time giving the material in a way that will be of aid to the teachers of science. Rugg says that all statistical material should be presented graphically. If he is right we have the challenge of making our graphical representation function in a more vital way than we have often found it doing. The physics and chemistry teachers complained to me that the pupils cannot do percentage problems, that they know neither common nor decimal fractions, and that while they may have had the principles of proportion taught to them they cannot apply these principles. They thought furthermore we should place stress on the hyperbola k equals xy and that we should give much attention to the simpler roots and powers. For instance one physics teacher remarked to me that the pupils do not know that both sides of an equation can be squared. In other words given

the pendulum formula $\frac{t}{t'} = \frac{\sqrt{e}}{\sqrt{e'}}$ the pupils seem to have no comprehension that each side can be rearranged by squaring. These teachers also placed emphasis upon evaluation of formulas. Perhaps this may all be apart from unified mathematics but it is certainly along the line of making mathematics more applicable, which after all is the main reason for all the agitation we have for bettering our mathematics teaching.

In closing, let me say that it is my belief that not all of the ills are solved by unified mathematics. It is no panacea, but it certainly is a move in the proper direction. Even its most ardent admirers must see its limitations, but at any rate unified mathematics faces toward progress. Perhaps the movement is radical but our mistakes have demanded reform in no uncertain way. Mathematics is somewhat like a person suffering from a serious malady. It will do little good to gloss over the difficulties or say that everything is all O. K. We must go to the root of the trouble, no matter how serious the operation may be. Call unified mathematics foolish or "crackbrained" if you wish but ten years it will be acclaimed with the plaudits that are now accorded to general science.

"Socializing the Mathematics" by Mr. Everett Owen of Oak Park was discussed in the following paper:

Socializing Mathematics

By the term "socializing mathematics", we shall mean the teaching of mathematics and its correlations with other subjects in such a way as to best fit the pupil to take his place efficiently in a democratic organization of society.

The content of mathematics in the high school in its relation to social purposes has received a great deal of attention. The content of first year high school mathematics has received most attention and practical utility has been stressed. This has led to a large increase in the use of formulae, graphs and exercises in expressing quantitative relations in the form of formulae. It seems to be the idea of some that usefulness of mathematical teaching depends upon being sure that each particular form of mathematical use in adult life shall be prepared for in advance. Yet Thorndike, in analyzing the verbal problems of a widely-used textbook in algebra insists that only forty-nine verbal problems of the total of four hundred ninety-one come up to a reasonable standard of genuineness, importance and utilitarian value. On close examination, you will find that the viewpoint as to genuineness and importance is an adult one. Then, one must remember that the field of high school mathematics is a rather barren one when judged by the criterion of immediate practical utility. Arithmetic, all will agree, is full of practical utility. Those parts of algebra and geometry that are of immediate practical utility could be taught in a very short time. Trigonometry opens up a wide field of usefulness and the field broadens so as to include a vast one when differential equations are studied. Attempts have been made to get practical problems, but in many cases these have been discarded because their use presupposes too great knowledge of technical affairs on the part of the student. So we still have with us the "born-in-captivity" problems and problems that lack genuineness and importance, especially when judged by adult standards. It is surprising how efficient some would-be reformers have become in judging the practicalness of a problem or of a method of teaching. It seems to me that the more this question of practical utility is studied, the more one refrains from passing judgment. So many seemingly visionary researches have ended in blessings to the world, when properly used, that it is very unsafe to say that this thing or that is practical and this or that

is not. So it seems that we may be justified in not becoming too greatly alarmed about this question of the immediate utility of the subject we teach.

"The child never learns just the one thing he and we have in mind. He is willy-nilly acquiring simultaneously many other things, particularly in the way of attitudes and ideals. If a child is set to memorizing a poem, the half hour spent on this will show not only a well-or-ill-memorized poem but certain attitudes or changes of attitude, good or ill, towards the poem, poetry in general, the teacher, the school, school life, etc." And so it is in mathematics. And we teachers of mathematics have too often allowed the impression to become too prominent that these attitudes of the pupils were unfavorable to mathematics. We have not told often enough how the high school enrollment has increased seven-fold while the population has only doubled. And, during that time, mathematics has been one of the few leading subjects and the parents of this period are the best supporters of a rigid course in mathematics. We have allowed too long the enemies of mathematics to ask their Socratic questions in a way such as will lead only to an answer favorable to themselves. We have allowed ourselves to be drawn into a discussion of practical aims in teaching mathematics when we really know all the time we were striving for ideally practical aims.

We must be frank in saying we are teaching the "science of necessary conclusions" and place the emphasis on the science. Mathematics is the only subject in school where a pupil's reasoning is on the firmest possible foundations. His statements are either true or false and he has within his reach, if he so wills, the means of knowing whether he is speaking truly or falsely. The vocabulary is short and entirely sufficient to express his thoughts at all times. The operations to be employed are four in number. These operations are the means of answering all quantitative questions. And, for a pupil in training, the methods employed, consciously and intelligently, in solving a problem, and not the answer, is the important thing. We have not sufficiently distinguished between a pupil in training and an adult citizen pursuing his daily vocation. We must lead the pupil to pursue consciously certain attempts to improve his mind in definite ways. We must lead him to say to himself,—"Now, I must solve these problems in such clear fashion that I shall know exactly what I did at every step and be able to tell the method to others, if necessary, readily and in exact mathematical language."

The pupil should be led to see that in solving a general or literal problem in algebra that he has solved not one problem only, but a whole family of problems; that in both algebra and geometry, the tools at his disposal, are infinitely more powerful than those that were used in arithmetic. And the teacher should not fail to show him that the clearness with which he solves his problems the directness of his reasoning now, and these infinitely powerful methods are directly related to his own future leadership. Tell him that statistics show that his standing in college at least is almost entirely determined by the kind of work he does in high school.

This consciously striving for definite improvement in perfectly definite ways is one of the best ways of giving social worth to mathematics training.

The part the teacher plays in training for social worth largely centers in the recitation. Here the pupils and teachers should meet in the attitude of a social group. Here the teacher is to develop ideals of frankness, attention, intellectual honesty, accuracy, cooperation, openmindedness and true scholarship. Many a student fails, or if he does not fail, becomes a superficial student and a negligent citizen because of the lack of frankness on his part. Many times this lack of frankness becomes a habit in a class, resulting therefore, not only in imperfect knowledge but a false attitude toward his duties as a student. It would be a good thing for a teacher occasionally to make or have made a quantitative study of the attention of his class. He should make a strong appeal for attention in two ways,—first by exhortation, and, second, by making the work done worth while and interesting. By exhortation, I mean, asking the students

to make it a conscious aim on their part to pay close attention by exercise of will power if necessary. You will have in mind examples where close attention has led to interest, and interest has led to scholarship and to leadership. In every school there are innumerable opportunities for leadership on the part of pupils. The mathematics teacher will be continually calling attention to these and inventing new ones in cooperation with other teachers and other pupils. He will spur on students to make it a conscious purpose and efficiency in mathematics shall be made to carry over into definite exercises in leadership. He will let it be known that the mathematics recitation is to serve as an opportunity to measure the clearness, rapidity, depth and accuracy of thought. Every day the mathematics recitation should furnish a pupil the opportunity of getting another pupil's method and viewpoint and to see that his ability to understand the other pupil's new or different solution is of great social worth. This, you see, will furnish an excellent and natural motive for good attention.

In teaching mathematics, we too often overlook the universal, powerful, inherent, human desire for recognition. We do this in various ways. One of the worst is the growing practice of developing each new subject by piecemeal questioning, so that when a pupil has completed his recitation, he can point to no real contribution of his own. This is a sort of domination that an unspoiled child should resent. The fact, that, in many cases, they do not resent this, shows that this practice has been carried on so long that all sense of responsibility on the part of the pupil has been killed. Rather than do this, let us state our problem clearly and wait for reactions from the pupils. And if they fail to react to the question, it is for us to find out what is wrong.

The best criterion of an educated man is his adaptability. By this I mean that an educated man goes through life meeting with confidence his daily duties ah they come. A pupil should have this confidence regarding his mathematics. It is only when he does have this feeling of confidence that he is receiving valuable training for life. To get such valuable training, it is suggested that the content of any textbook constitutes only a beginning of the materials to be used in the study of mathematics. I refer to the practice of putting meaning into the problems of the text beyond that merely of finding an answer. To suggest an easy case, take the formula for Ohm's Law,—C=E/R. Such questions as the following may arise: What will be the effect on the current if we double the resistance? If we double the voltage? If we increase both voltage and resistance by the same numerical amount? When will an increase of ten ohms in the resistance have the most effect, when R is large or when R is small?

In geometry, the same idea is still more easily carried out by having a figure gradually change its shape. This idea lies back of the desire of many mathematics teachers to introduce calculus into high school mathematics. The social uses of mathematics where applied to dynamic situations are of far more value to us than those cases where mathematics is used in static situations.

So many inventions have been made in the last generation that it often seems to young people and sometimes older ones that very little constructive thinking was done previous to the invention of the electric telegraph or even previous to the development of the automobile. This frame of mind has naturally led to a spirit of levity towards the very foundations of civilization. In this conection, I wish to stress the importance of the history of mathematicas. Most textbooks now have pictures of noted mathematicians and short accounts of their lives and contributions, but in most cases these are unsatisfactory because the pupils cannot appreciate the contributions mentioned. Why can we not have the story of mathematics told in a way that will be full of human interest? This story should stress the beginnings of algebra and geometry, the difficulties the ancients had with fractions, the number systems and the number system we now have,—the greatest invention made by man,—the enlargement of the number system by taking in negative and radical numbers, the famous problems of secondary mathematics, and, where known, their discoverers; and in con-

nection with the value of π, a number of series of finding π discovered by the methods of calculus. These topics will suggest others, but my point is, that the history must be made interesting and understandable by the pupil using the textbook. The teacher should be able to show that these discoveries of the past have resulted in wonderful inventions and discoveries of the present and that in many cases these inventions and discoveries rest upon mathematical foundations.

The purposes of the study of the history of mathematics are two in number;—(1) To add interest to the study of mathematics and (2) and to bring about certain attitudes which are of great value to society. This treatment will show that our present knowledge extends far back into the past. It will have a wholesome effect on the pupil to know that this theorem in the study of which he has had the help of textbook, class and teacher was thought out by a certain man long ago. This treatment ought to help check radical tendencies and cause us to have greater appreciation of the price of modern civilization. It should give us greater respect for original thinking and a greater desire for the same.

Classification of pupils on the basis of ability is now receiving much attention. It deserves a great deal more study. Every means of arriving at a true judgment regarding real ability should be used. This classification makes it possible for more pupils to do the best work possible. After all, this "doing one's best" is of first consideration in school as elsewhere. In the bright class, wordy and tiresome discussions may be dispensed with, the problems used may be more difficult, more ways of doing the same thing brought in, and more original work done. The method of the recitation should be quite different from that used in the slow classes. In the slow classes, greater frankness in admitting lack of knowledge is secured. The difficulty of the work can be adjusted so that the pupil pursues the subject with greater satisfaction than he otherwise would. I believe in letting the pupils know that classification exists and what is expected in each class, and in giving credit based on results achieved. This last point is important for, otherwise, we shall put a premium on laziness. We must keep clearly in mind that the welfare of the individual pupil is the main thing to be considered. By this I mean that the pupil is to be placed where he can do, with satisfaction, the best work possible for him to do. Please remember the words, "with satisfaction", for none will pursue any end for any great length of time unless he is conscious of real benefit received.

This leads to the worst criticism against mathematics. Very often, mathematics, particularly algebra, is taught in such a way as to leave the pupil thinking that success in algebra is the result of lucky juggling. Such knowledge cannot function in life except in a negative manner, and is devoid of mental power of any kind. The principles involved are few in number and very simple. The emphasis must be placed on fundamental principles and analysis. The pupil must analyze the situation in each problem and make his plan and be able to tell what his plan is. This means more chalk-talking, more discussion in class. The impression too often given by adults who have studied geometry is that memory was the main faculty used in the study of geometry. This is a fault of the teaching and does not mean that geometry does not function in life. The nature of geometrical knowledge should be often shown. All sciences are based upon fundamental assumptions. The same thing is true in religion. All that we ever succeed in doing is to pursue the unknown a few paces. Give illustrations of this fact. Many students get the idea that science and mathematics are built upon foundations quite different from those upon which religion rests. This is not the case. Religion does not rest upon motion but on certain fundamental assumptions which cannot be proved. Pupils should be taught this very frankly, for their attitude toward religion is of highest importance.

Certainly mathematics will not function in life if we do not show rather definitely how it is to function. Let's teach pupils to examine sermons, essays,

political speeches, etc., in the same spirit in which a geometrical proof is examined,—sentence by sentence. The contrasts between mathematical problems and life problems all are accounted for by this difference, that, in mathematics he has become accustomed to having just the necessary and sufficient facts to give him a solution, whereas, in life, the problem may be exceedingly complex and must be solved without knowing all the facts that have a bearing on the problem.

Certain spiritual qualities are so necessary to a happy, useful life and for the good of society that we must do all we can to develop them. Among these may be mentioned leadership, honesty, accuracy, open-mindedness, desire for fundamental principles, frankness, imagination, religion. Mathematics is admirably adapted for developing these qualities but we must make it our definite aim to do this.

The discussion of this paper was led by Mr. Thos. Deam of Decatur, who presented some tried and proved ways of making mathematics interesting and useful.

It was moved and seconded that the chairman appoint a committee to nominate a member of the executive committee for next year. Motion carried. The followng people were appointed: Mr. Smothers, Mr. Schrieben, Miss Helen Brackenseik, Mr. Parsons and Dr. Taylor.

Next followed a demonstration of the "Use of the Slide Rule in Secondary Schools" by Mr. W. W. Gorsline of Chicago.

The meeting adjourned for the morning.

Afternoon Session

The meeting was called to order by the chairman and the nominating committee instructed to nominate a representative for the library book-list committee.

A paper on the **"Extension of Concepts in Elementary Mathematics"** by Dr. A. J. Kempner was first discussed. The synopsis of this paper follows:

Title: Extension of Concepts in Elementary Mathematics.

Introduction: At a certain stage of the development of mathematics we may imagine that *Arithmetic* dealt only with *positive integers* and *positive rational fractions,* and that *Geometry* dealt only with a *finite three dimensional space* of *Euclidean Character.*

At this stage, in *Algebra,* or *Arithmetic;* no zero, no negative numbers, no irrational numbers, no ∞, no complex numbers; in *Geometry,* no infinite elements, no planes of complex numbers, no complex points, no Non-Euclidean spaces, no four dimensional spaces.

Gradual widening of the domain of Mathematics:

Two questions of prime importance:

I. *Why* were the the new concepts introduced?

II. *How* was it done? Can we recognize any general rules for such extensions?

§1. Arithmetic and Algebra

(a) *Negative numbers and zero:*

Only mention that necessity for admitting negative numbers and zero arises when it is desired that it be possible to solve $x = a - b$, $b \leqq a$.

(b) *Irrational numbers:*

Consider $x^2 - 2 = o$. Unless we introduce a new number which we call $\sqrt{2}$, we must say that $x^2 - 2 < o$ has no solution. This would seriously hold up the development of Algebra. *Reason* for introducing irrational numbers:

To enlarge the scope of an important theorem (by introducing the irrational square roots we assign roots to many equations, which otherwise would be without roots, and thus come a step closer to the very important theorem: every algebraic equation has a root)
Or, expressing ourselves differently:
To enlarge the scope of an important operation (in the case of irrational numbers, for example, the introduction of $\sqrt{2}$ makes possible the extraction of the square root of *2*). We shall see that usually the *reason* for introducing new important concepts may be stated in this form.

However, it must not be imagined that simply calling the square root of *2*, $\sqrt{2}$, really introduces the new irrational number.

At this point the 2nd question sets in: *How is the new number to be introduced?* One will usually want to do it in such manner that it will fit into the already existing number-system in the best possible manner. In other words, *so that the already existing laws are not disturbed.* (Hankel's Priuzip der Permanenz der formalen Gesetze.) Thus for example, an irrational number a should be defined so that $a(a + b) = aa + ab$ for a, b any rational numbers; or so that $a3 = 3a$ if a and *3* are two irrational numbers, etc.

After the formal definition (for example $(\sqrt{2})^2 = 2$) has been laid down and the rules which it $(\sqrt{2})$ is to obey, are agreed upon, it remains to be shown that there really is a number which satisfies all of these requirements, in other words, the *existence-proof* must still be given.

For irrational numbers, this existence proof is a real difficulty (Dedekind's Schuitt, Cantor and others).

(c) A similar discussion possible for complex numbers, for ∞, etc. But for ∞ in Algebra this difference: One might be tempted to say. ∞ introduced so that $\frac{a}{k} = o$ has a meaning (assuming $a \neq o$), namely $\frac{a}{k} = o$ for $k = \infty$. But this is decidedly unsatisfactory because we should have to admit $\frac{a}{o} = k = \infty$, and division by zero is to be strictly avoided.

Here a case where very clearly just writing down the equation $\infty = \frac{\alpha}{1^1}$ does not define anything at all. Therefore better *not* to say:

∞ introduced in Algebra to maintain generality in the operation of division. Indeed, in Division we *do* have this exception and cannot get rid of it.

Rather, one is led in Algebra to ∞ by other considerations; for example, inoffensive statements such as:—
(α) *Any* number can be divided into halves;

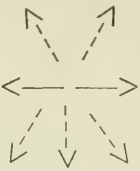
(β) Between any two distinct numbers one can always find another one;

(δ) There is no largest integer; etc. etc.—
lead of necessity to the notion of infinity.

Best to say: we do not introduce ∞ as a *definite* number *at all;* all we do is to give rules for dealing with quantities which grow larger and larger.

§2. Geometry

(a) ∞ in Geometry: Everything lying farther away from a fixed point than an arbitrarily large given distance N. On line $\leftarrow\!\!-\!\!-\!\!-\!\!-\!\!\rightarrow$.



In plane $\leftarrow\!\!-\!\!-\!\!-\!\!-\!\!\rightarrow$.

Reason: I. We like to feel that space is unlimited

II. The theorems of Geometry are to be maintained. (Removal of exceptional cases, for example two straight lines in a plane always a point of intersection, etc.)

Method: So that the elements at ∞ will fit in with the finite elements without conflicting with existing laws.

(b) In the plane of complex numbers usually ∞ treated differently from the real (projective) plane. In the real plane, a whole line at ∞; in the complex plane, only one point at ∞.

Discussion of the reasons for this distinction and of its justification. In particular, to show that there is no logical contradiction between these two mutually exclusive assumptions concerning ∞ in Geometry.

(c) Introduction of complex numbers in Geometry.

(d) Introduction of 4-dimensional space.

(e) Introduction of Non Euclidean Geometry. (Assumption that Euclid's Parallel Axiom does not hold.)

§3. Conclusion

In all of these extensions, how do we know that we are not getting into logical difficulties? We must admit that we have no absolute safety. The so-called "axiomatic method" gives us at present the greatest degree of safety, but there is a possibility (no probability) of our having put into our system two elements (objects or operations) which contradict each other.

Algebra

	Irrational Numbers	*Complex Numbers*	*Infinity* ∞
Reason for Introduction	To extend scope of a theorem; to remove exceptional cases.	As in irrational numbers	For example: Unnatural to assume, a greatest integer; etc.
Method of Introduction	Maintenance or extension of existing laws.	As in irrational numbers	No number ∞ introduced; instead rules established for dealing with quantities growing larger and larger.

Geometry

	Infinite	*4-Dimensional Space*	*Non-Euclidean Geo.*
Reason for Introduction	1. Unnatural to assume that space limited. 2. Extension of scope of theorems; removal of exceptional cases.	Essentially convenience	Logical difficulties in Euclid's Axioms.
Method of Introduction	Maintenance or extension of existing laws.	Extension of old laws (applying to three dimensional space)	Extension of old laws (in a sense to be explained.)

Some Literature References

(Only English)

1. Geometry of four dimensions, Manning (Introduction).
2. The fourth dimension simply explained. Ed. by Manning. (Collection of 22 papers.)
3. Common sense of the exact sciences. Clifford. (p. 32-46 for negative numbers, etc.)
4. Higher Mathematics. Ed. by Merriman-Woodward. (Ch. III. p. 72 & 73, infinity in Geometry, Ch. VI. p. 256, infinity in plane of complex variable.)
5. Monographs on topics of modern mathematics. Ed. by Young. (Ch. II, §§14-20, infinity in Geometry; Ch. III, pp. 93-110, Non Euclidean Geometry; Ch. IV. §3 with references, irrational and complex numbers; §§13-20, Axiomatic Method.)
6. Irrational numbers, Manning.
7. Essays on numbers, Dedekind.
8. College Algebra, Fine (pp. 39-78, irrational numbers & complex numbers.)
9. A text book of Algebra, Aldes. (Ch. I, fractions and o; Ch. II, VIII, IX, irrational numbers, complex numbers, etc.)
10. Functions of a complex variable, Fiske (p. 9, 8).
11. Functions of a Complex Variable. Townsend. (Ch. I, real and complex numbers; Ch. V, 8).
12. Functions of a complex variable, Durege. (trsl. Fisher-Schwatt). (§14, 8).
13. Functions of a Complex Variable, Burkhardt, (trsl. Razor). (Ch. I, Real and complex numbers; Ch. II, §12, Division by o; infinity.)
14. Number and its Algebra, Lefevre (§3, elements at 8).
15. A first course in projective geometry, Smart, (§3, elements at 8).
16. Mathematical Philosophy, Keyser.
17. The Philosophy of Mathematics, Shaw.

The discussion was led by Miss Crewes of Peoria who developed the query: What is the best way to present the relation of these concepts: zero, negative numbers, irrational numbers, infinity and complex numbers, to elementary algebra classes?

The following people further discussed the problem: Mr. Felts of Carbondale, Dr. Shaw and Dr. Lytle of the University.

The nominating committee reported the following nominations:

Executive committee for three years—Miss Marie Wilson, Quincy.

Library book-list committee—Dr. E. B. Lytle, Urbana.

It was moved and seconded that the report be accepted. Motion carried.

"Teaching Secondary Mathematics" by Mrs. Edith Irene Atkins of Normal was the next paper for discussion. The paper follows:

The Recitation in Mathematics

Many movements in education are claiming the attention of teachers of mathematics. Some teachers and administrators would make all high school mathematics elective, some are teaching some form of general mathematics, some are emphasizing standardized tests, some have instituted supervised study or instruction by homogeneous groups, and others are working on the content of courses in mathematics for both the junior and the senior high schools. These different movements all indicate an earnest desire on the part of their exponents to help in the solution of educational problems, and every progressive teacher is vitally interested in the results, either from the standpoint of a participator or an observer.

But is it not true that the large majority of high school teachers in Illinois are teaching the usual prescribed and elective courses in algebra and in geometry in forty or forty-five minute periods from text books, which reflect in varying degrees modern trends? As members of this large group, may it not be well for us to take a survey of certain fundamental principles which should guide mathematics teachers in their work?

I have read the primary purposse to be realized in the teaching of mathematics as laid down by the National Committee on Mathematical Requirements, and the purposes as stated by many writers of text books and other educators, and finally, I have formulated the aims which I shall assume represent current thought. The purposes of the teaching of mathematics are:

(1) To impart a knowledge of those facts, processes, and applications of mathematics which serve as a minimum requirement in adequately controlling our environment, which will function in other high school subjects, and which will at the same time, if possible, prepare for the future study of mathematics.

(2) To develop an appreciation of the beauties of mathematics, and an appreciation of the power of matematics in the world.

(3) To develop those powers of thought and action which will make a good citizen.

The class room teacher meets his class perhaps one hundred eighty times during a year in periods of forty-five minutes each. In these one hundred eighty contacts covering one hundred thirty-five hours the teacher must make his impressions, and at least partially realize these purposes. In this discussion we shall accept the content of the courses as given by our later text books, and center our interest around the recitation.

The four lines of thought to which I wish to call your attention are:

(1) Every pupil in the class should feel that mathematics is worth studying.

(2) The recitation should be conducted according to the principles of scientific business management.

(3) The dominate aim governing class room procedure should be to keep every pupil thinking on the lesson all the time.

(4) The ultimate aim should be to produce in our pupils scholarly attitudes of mind, and make self-reliant workers.

By no means are these mutually exclusive ideas, but they will serve as thoughts to guide our discussion.

Every pupil in the class must feel that mathematics is worth studying. This emotional response is essential to effective work. Psychologists tell us that educative acts must be purposive acts. If the pupil feels that mathematics is just "stuff", that it is of no use, that it is hard and that it will be impossible for him to understand it, little can be accomplished.

In overcoming these reactions the teacher is a most important element. The recent great German mathematician Felix Klein said: "If I were to formulate the great problem of pedagogy mathematically, I should say that it consisted in marshalling the individual qualities and capacities of the teacher and his students as so many unknown variables and in seeking the maximum value for a function of (1+n) variables,

$$F\ (xo, x1 \ldots\ldots\ldots xn),$$

under given collateral conditions. If this problem as a result of the advances made by psychology should some day admit of direct mathematical solution, then from that day onward practical pedagogy would have become a science. Until then it must remain an art." The teacher's personality, his scholarship, his enthusiasm for his subject, his sympathy, his open-mindedness are dominant factors in all successful instruction.

The direct practical uses which we can lead the pupil to make of the equation in algebra or the theorem in geometry are limited, but we must make him see that he is enjoying the results of the uses to which other people have put mathematics. Lead him on an excursion into the unseen, and discover that there is mathematics back of the house he lives in, the clothes he wears, the food he eats, the books and newspapers he reads, the artificial light he uses, the street car or automobile he rides in, the bridges he crosses, the buildings he enters.

When the class is studying some particular geometrical form, ask them to look for this form in the school yard, city and country. My pupils have discovered triangles in shapes of leaves, in shapes of trees, in gable ends of buildings, in sections of roofs, in supports for brackets, in scaffolding, in saw horses, in derricks, in gates and in bridges. Follow these findings by the question, "Why is the triangle used as a brace?"

The students in the elective courses will be interested in knowing that the actuary in the office of the life insurance company uses geometrical series, the binomial thorem, and the theory of probability in computing premiums, and that economists, experts in finance, and social investigators should know the theory of investment and the theory of statistics—subjects which rest upon a mathematical substructure.

When the pupil makes graphs of quadratic equations, he learns that the curve $Y^2=4ax$ is called a parabola. How his interest in this curve is awakened when he knows that it appears in the flight of a ball through the air, in the automobile headlight, in lighthouse reflectors, in mirrors for focusing the sun's rays, and in theater and auditorium construction. Show him a cone and point out the different conic sections, and tell him that it was eighteen hundred years after Menaechmus commenced his study of conic sections before Kepler dis-

covered that the planets move in elliptical orbits, and that later it was discovered that the comets which return, like Halley's comet, move in ellipses, and others in parabolas, and some perhaps in hyperbolas. Tell him the story of the two young men, Adams of England and Leverrier of France, who discovered a new world by mathematics. Astronomers had discovered that Uranus was wandering out of the path expected of it and behaving irregularly. What was the cause? Adams and Leverrier set out independently to solve the problem, and computed these disturbances to be due to the attractive force of another planet the very existence of which was unknown. They determined the orbit of this planet, and told the astronomers that if they would turn their telescopes to a certain part of the heavens at a certain time they would there find a new world. It was found by Galle at Berlin, September 23, 1846, and named Neptune.

One type of the beauty of the mathematics appears in the harmony and interplay between algebra and geometry. The graphs of equations show this admirably. The square of the sum of two numbers may be expressed algebraically and geometrically, the segments of a line divided in extreme and mean ratio may be found by compass and straight edge, and also computed by algebra. The pupil may have started out to find only the segments made by the internal division, but algebra is generous and gives him both the segments of the internal and of the external division with one asking. Psychologists tell us that the rectangle most pleasing to the human eye is that in which the sum of the two dimensions is to the longer as the longer is to the shorter. Thus we see this Golden Section of the Greeks applied to modern art. Is there not a beauty in the thought that the truths of mathematics are eternal? Chemistry, physics, and physiology texts written twenty-five years ago contain many statements now known to be false, but the truths of mathematics compiled by Euclid three hundred years before Christ are just as true today as they were then.

In the mathematical formula, the pupil should see a short hand expression of a law, and in the equation a great labor saving device for the solution of problems. As many different countries use practically the same symbolism, mathematics has been called the language of languages. Do we as teachers appreciate that the mathematical formula is the ultimate form in which truth in all subjects seeks to express itself?

I have been much interested in a recent illustration of this fact from a field not generally supposed to be adapted to mathematical investigation—medicine. In 1908 and again at the outbreak of the war Dr. Alexis Carrell of the Rockefeller Institute of Medical Research noticed that the rate of healing of a wound seemed to be proportional to its surface area. He plotted curves using the time as abcissa and area of wound as ordinate, and came to the conclusion that the relationship could be represented by an equation. He turned over the matter to Dr. du Noüy of one of the base hospitals in France who developed the formula,

$$Sn = S_{n-1}\,[1-i\,(4+\sqrt{4-_2})],$$ where

Sn is the area after 4n days

S_{n-1} is the area after 4 $(n-1)$ days, and

$$i = \frac{S_1 - S_2}{6S_1}$$ where S_1

is measure of area on first observation, and S_2 a second measurement taken after four days. The surface area of the wound is traced on paper, and then computed on a mathematical machine called the planimeter.

If the ploted observation does not agree with the graph of the formula it means that there is something wrong with the healing, such as infection in the wound. In this way infection can be found out by mathematics before its presence could be detected by medical examination. The formula, too, will enable the research worker in medicine to determine the action of different fluids on the healing of wounds. The data given are taken from Karpinski, Benedict and Calhoun's Unified Mathematics, a text book for college freshmen.

Pupils may be led to a better appreciation of mathematics by frequent references to its history. It is most unfortunate to have pupils think, if they think about it at all, that algebra and geometry were found somewhere ready made. Some knowledge of the history of a topic has a most stimulating effect upon the pupil's interest. A study of the history is most valuable, too, for the teacher for it gives him a background from which he can critically evaluate current movements, and it makes him a better teacher for the way the race has learned its mathematics is indicative of the way the child will learn.

Also I want the pupil to know that mathematics is still in the making. In his address in 1920 before the mathematical section of the American Association for the Advancement of Science, on the topic "A Decade of American Mathematics," Prof. O. D. Kellogg of the University of Missouri discusses the contributions made to mathematics during the decade from 1910 to 1920. By his investigation he found that three hundred twenty-five persons had contributed one thousand two hundred fifty-eight articles in this interval. The research work of tomorrow must be done by somebody's pupils of today.

When would I try to teach all this? I would have lessons, perhaps one a month, devoted exclusively to lessons in appreciation of mathematics, just as the teachers of literature, music, and art give lessons in cultivating appreciation in their different fields. And all the time during the year as the work develops, I should be on the lookout for opportunities to inject these illuminating, humanizing and stimulating ideas into the regular lessons. Of course we won't get a one hundred per cent response, but neither does the teacher of literature, of music, or of art.

The recitation should be conducted according to the principles of scientific business management. Teaching is the teacher's job. Just as we expect a good employer of labor to surround his employees with proper physical conditions if he would get the best results, so the teacher should look carefully after the seating, lighting, temperature and ventilation of the room in which his pupils are working. So far as possible, both in business and school, waste should be eliminated. The teacher should organize the routine work of the recitation such as the movements of the class, taking of attendance, passing of papers, etc., so as to take as little time as possible. He should not waste the pupil's time through giving indefinite assignments, and through lack of adequate lesson planning. The head of a factory knows the output of his individual workers. The business man knows if there is one department of his business that is not paying dividends. He searches for the cause and changes his business methods. The teacher can use timing exercises and standardized tests to test the ability of the pupils, and test the results of his own labor. He can discard a method that doesn't bring results and try another.

As teaching is the teacher's job so going to school is the pupil's job. The pupil doesn't come to school and then go out into life. The school years are life. He should be on time as the bank clerk, the salesman, the stenographer must be; he must bring his book, paper, and pencil to class as the carpenter brings his tools to his job, and the doctor his medicine case when he is called to see a patient. He should expect to prepare each lesson to the best of his ability, and to hand in his work the day assigned and not the next day. If a baker wishes to keep a customer, he makes good rolls every day and delivers the rolls for tonight's dinner today, not tomorrow. I have found pupils wonderfully susceptible to these parallelisms between their behavior as students and the practices of business people.

The dominant aim governing class room procedure should be to keep every pupil thinking all the time. I wish to direct your attention to this thought through a series of pictures of recitations, and let you draw your own conclusions. In every case pupils were reciting on subject matter that had been assigned. A teacher was conducting a lesson in the solution by substitution, of systems of linear equations involving two unknowns. One pupil after another

was called upon to read off the solution of a problem from his paper. You recognize that there are four different first steps possible, so in all probability the solutions by all the members of the class could not have been alike. As each so-called explanation was given the rest of the class sat in a passive attitude, only arousing themselves to compare answers.

In another class where the same type of lessons was under discussion, the pupils asked pointed questions about two or three troublesome problems. The teacher held the crayon and wrote the successive steps in the solution on the board, as she called upon various members of the class to think them out and state them. Every one seemed to be forming in his own mind the step he would give, and comparing it with the one that was given. No error was allowed to pass. Other possible solutions were suggested and their values weighed. The results were checked. The general plan of solution was emphasized, and stated by one of those who didn't get the problem.

The lesson was in fractional linear equations. At the beginning of the hour the teacher called for answers; a pupil who had solved an equation and checked his result was allowed to give his answer. After all the results had been given, the teacher called the roll and each pupil responded with the number he had right. The teacher permitted those who had every problem right to work on the advance lesson, and sent the remainder to the board with the direction "attempt the first problem you had wrong." He passed quickly from one to another giving suggestions or asking questions. When several were perplexed about the same point, he called for the attention of the whole group at the board and explained the difficulty. He saw that he couldn't care for all those who needed help, so he called upon one of the stronger pupils to assist him. Is this an adaption of the method of instruction by homogeneous groups which any teacher may find it valuable to employ at times?

In a geometry class the different pupils were assigned propositions, and told to pass to the board and put on the figures. After giving eager lingering glances at the work in the book, they reluctantly set out on their tasks. As each one finished his drawing he hastened back to his seat and studied. When all had finished, the demonstrations began. Some pupils recited smoothly and correctly in a manner suggestive of memory work, and the others became hopelessly confused. The teacher assumed the responsibility for criticisms, and the class looked bored.

Let me present another picture of a geometry class. The teacher drew the figure for the proposition according to the pupil's direction. He always took such latitude as the direction permitted, and if the result was not the one the pupil desired, the teacher held him for the correct statement before making the drawing. Then the following questions were asked. State the theorem. What is given? What is to be proved? Give the general plan of solution. The proof was now given step by step by the different members of the class. Then one of the pupils was called upon to give the entire demonstration. He stepped quickly to the board where he could identify himself with the figure. When he had finished, he remained at the board to answer questions and defend his work against the attacks of his classmates. Everyone was attentive and interested. The teacher told me that frequently the pupil asked to recite, drew the figure free hand himself, talking as he worked.

It was the week before semester examinations. In one classroom the pupils were feverishly going over the pages of propositions and problems. In another the review was a NEW view, for the teacher had given out sheets of questions which helped the student to get a grasp of the work as a whole. For instance, at the close of the year, the questions in ninth grade algebra centered around the equation.

Another teacher believed in reviewing units of subject matter as they were completed. After the class had finished long division, he asked them to make out a list of the definitions and laws and rules which they needed to know in order to work understandingly a problem in long division. In geometry when

the class had studied the theorem, the sum of the angles of a triangle is equal to two right angles, the dependence of this theorem upon others, and of these upon still others, and the fact that every proof is ultimately grounded in definitions, axioms and postulates was admirably worked out as a class exercise in the making of a "geometrical tree." After the class had studied the theorem about the area of a circle, the teacher directed them to go back to the rectangle and trace the sequence of all the theorems involving areas, and carefully show the connection.

The ultimate aim of instruction should be to produce in our pupils scholarly attitudes of mind, and make self-reliant workers. How to attack the problems and plan their solution can profitably make an entire lesson exercise for many recitation hours in algebra, and how to attack geometrical theorems and exercises is the very foundation of all really efficient work in geometry. I have visited classes conducted on the syllabus plan where every theorem was an original exercise to be worked out analytically by the members of the class. In geometry these lessons on methods of attack are ESSENTIAL when the pupil is first introduced to the nature of a logical proof, and when some new type of proof, or some new subject as loci, or variables and limits are taken up.

Mathematics furnishes us with a type of thinking which should be helpful in many lines of inquiry. Early in my teaching I remember how pleased I was when a geometry pupil of mine was asked by his English teacher where he got the idea for the form of an argument he had submitted, and he replied, "We always do that way in geometry." This bright lad had generalized his experience in geometry and made it available in debating. But the findings of psychology, so far as I know them, point to the conclusion that we must TEACH the pupils how to apply their reasoning in geometry to other fields. Unless related ideas are pointed out, in general, they will not be perceived.

Similarly, if the student after he leaves school is to be expected to apply his knowledge of mathematics to the solutions of practical problems, he must be taught to apply it while he is still in school. How many gallons of water in this cylindrical cistern? What is the height of the flag pole in the school yard? How would you proceed to lay off a tennis court or a foot ball field? In each case have the pupils give a detailed description of a workable plan, and then have them do the actual work.

I fear that such assignments as "Work the next ten problems," "Take the next two propositions" are far too frequently given. The teacher's preparation of the lesson should be made before the assignment, not afterwards. Then and then only, can he be prepared to make the assignment definite, suited to the capacity of the class, and encouraging. To make a task encouraging the pupil should be led to the point where he really wants to get at the work and knows how to attack it. Here is a good place for fitting in some of the material that will lead the pupil to see that mathematics is worth while. At the beginning of the course in algebra, it may be best to devote time in the assignment to teaching the new concepts and the new language of algebra. In geometry the assignment can properly be in the nature of the development or research lssons referred to above. Not all the difficulties should be removed, but the pupil should be put into a condition where he can help himself. A minimum assignment for everybody, and honor problems for those who can do them are often incentives to increased effort.

We must not forget that the ultimate aim of instruction is to produce self-reliant thinkers—real students who can study things out for themselves. So we must gradually throw them upon their own resources. Give them a hard piece of work to be done without any help, and the next day give a short test to see how many really have mastered the assignment unaided. The ability to get ideas correctly from a printed page is one of the most valuable attainments that a pupil can take away from the school room. No matter what he does after he leaves school, he will find this power a great asset.

Closely associated with the power to get ideas correctly should be the power to express those ideas correctly. Clear thinking and clear expression are inseparably connected. What is the thought in the mind of the pupil who talks about "the value of an equation" or tells you that the "two sides are proportional." Some pupils make no difference in the reading of these two expressions, $-a^4$ and $(-a)^4$, or in these four, $\frac{a+b}{c-d}$, $\frac{a+b}{c}-d$, $a+\frac{b}{c}-d$, and $a+\frac{b}{c-d}$.

Why do we hear "three and one thousand four hundred *and* sixteen *tens a* thousandths," "sum of the angles of a triangle are," "Divide a line *into* extreme and mean ratio," "Integal" for "Intgral,' "Frustrum" for "Frustum,' etc.? I wish that the words transpose, cancel, and clear of fractions could be eliminated from our text books. We don't need them, and they are such convenient shields for the indifferent thinker to hide behind.

In speaking of the contribution that mathematics may make to good English, Dr. J. Rose Colby head of the literature department of our school says: "In mathematics we are dealing with concepts and relations that make in all probability our nearest approach to absolute truth. To mathematics, therefore, we are wont to look for the severest training in exact thinking. But exact thinking is practically impossible without exactness in the use of terms and logical precision in the ordering of our thoughts. And it is training in the exactness in the use of terms, this orderly and logical movement from thought to thought, in the interest of truth itself, that constitutes the peculiar service of mathematics to language training. The teacher of mathematics who fails to demand and secure these things, who fails therefore to develop in his pupils a conscience in the use of words, a scrupulous niceness in the basing of conclusions on premises, has missed the best part of his business."

Finally may we not say that if we can make our pupils eager in seeking after truth, if we can cultivate in them a respect and love for truth, and can help to develop in them the ability and the desire to use truth for themselves and in the service of others, we shall have realized the whole range of aims of the teacher?

The discussion was led by Miss Clara A. Bartow, who spoke as follows:

The Recitation in Mathematics

If the work of the National Committee on Mathematical Requirements does nothing but cause each instructor to endeavor to give herself a satisfactory answer as to her reasons for teaching mathematics, and to seek to make definite the objectives which direct her work, it has been very much worth while. Both the aims of mathematical instruction and the objectives to be attained are very definitely and very completely stated in the reports of that committee.

The more study I give their reports, the deeper my belief that their suggestions, aside from certain omissions recommended and the correlation of the various branches of mathematics, is not a change so much in content, as it is in the method of presentation or attack. That is, the technique of the subject should be a means to an end and not an end in itself. Or again, if teachers make it their first concern to see that algebraic symbols and expressions mean something to pupils, they will have need of less concern about their manipulation. I believe that one might profitably devote considerable time in creating the proper atmosphere for the subject one is to teach, especially if it be one entirely without the previous school experience of the pupils.

We have too frequently lost sight of the fact that the gap between the eighth and ninth grades is a wide one unless correlated mathematics is taught in

the elementary school. Indeed, now that the subject of mathematical curricula is being so widely discussed and so much criticism hurled at the kind of instruction given heretofore, it is desirable, even though difficult in the smaller communities, for an instructor to defend her subject, and make her pupils feel that it is worth while. Especially if an instructor from a nearby normal school shall in a commencement address to an eighth grade class, state that the subject of algerbra is of so little value that it should not be required of high school freshmen, and ridicule the subject in various ways.

And institute instructors do not create a helpful atmosphere when they say that 90% of the algebra and Latin taught in high schools is bunk. It is much easier to create the desired atmosphere if the minds of the pupils are not prejudiced previously. The personality of the teacher will determine whether she wins them or not. Indeed, the teacher is an important factor. As a novice, I thought scholarship and enthusiasm were of chiefest importance but the longer I teach the more I feel the importance of sympathy and patience. A hard boiled teacher (if you will pardon the language of the street) will not succeed as a mathematics instructor.

It is much easier for boys to see the utility of the subject than for girls but the study of mathematics in the arts will appeal to the aesthetic instincts of the girls.

But girls as well as boys are easily interested in mathematics as a growing subject, and can be induced to make special reports showing its progress. They are especially interested in the evolution of the symbols of algebra.

Perhaps the creation of the proper atmosphere would minimize the failures more than we realize. Are we doing enough to create that atmosphere? In planning the recitation in addition to the primary purpose of the teaching of secondary mathematics which our committee states as, "the development of the powers of understanding and analyzing the interdependence of quantities and spatial relations which are necessary to a better appreciation of the progress of civilization and a better understanding of life and the universe about us and to develop those habits of thinking which will make these powers effective in the life of the individual", we must have ever in mind the more specific aims mentioned by the committee such as the "emphasis of the idea of function" thruout the course, and "the emphasis of the use of common sense in computing from approximate data". Too much of our teaching has and perhaps still makes algebraic manipulation an end in itself.

A skillful teacher must use various devices to shorten the time necessary for drill in the technique of the subject so that more time may be devoted, first to an understanding of the language of algebra and its intelligent use, and second, to the development of the ability to analyze a problem, formulate it mathematically, and to interpret the result. Personally, I use flash cards to give rapid drill in the fundamental operations, and have charts displayed continuously with statements of fundamental principles.

To keep interest one must use variety in the recitation, but the recitation in which the pupil performs most and the teacher least, more nearly succeeds in keeping every pupil thinking all the time.

With board work the teacher can determine more quickly and more accurately the weaknesses of pupils. Sometimes one may allow the stronger to help the weaker and many times a pupil talking as a teacher chalks will be more effectual than the teacher's presentation.

But here the oft repeated question confronts us, "How much of the recitation period shall we devote daily to the weaker?" Is it fair to those of quicker perception that the major portion of the time be devoted to the few? How frequently the brighter lights must be wearied by the constant repetition of that they grasped so quickly! Then again is it better to divide the pupils into sections according to their grade of intelligence? Personally I believe it is better for those with a high intelligence quotient to thus segregate them but I am not convinced, as yet, that it is better for the whole group.

We must give variety to our tests as well as to the recitation. I occasionally make use of the Yes and No type of test, although it is not especially recommended for our work.

We succeed, I suspect, in proportion to the effort we expend in fitting our instruction to the pupil's capacity, in directing his efforts toward correct interpretation and solution remembering always that we are to produce in him a scholarly attitude of mind and ultimately make him a self reliant worker.

But quite as important as all the other requisites of a real teacher, we must have poise so that our optimism may be, not spasmodic, not periodic, but continuous, in spite of the disappointing results of an examination or the criticism of a patron, and contagious so that each pupil may be impelled to do his best.

13. MODERN LANGUAGE SECTION

The meeting of the Modern Language Section of the Conference was held in the Unitarian Church. Miss Josephine C. Doniat, Crane Junior College, Chicago, presided. The first number on the program was a paper by Miss Josephine T. Allin, Englewood High School, Chicago, on **"Conducting a Reading Class in French."** The paper is summarized as follows:

A. Teach students how to read, by:

1. Intensive, careful exercise, in detail in class.
2. No literal translation, no long assignments.
3. Small amounts, interpreting here and there.
4. Thoroughness; do not cram large quantities, nor masterpieces before they are ready for them.
5. Emphasizing "how well", not "how much".
6. Getting idea of the meaning from the first reading, adding to it by a second, finally using a dictionary for some words.
7. Occasional questions to make sure of comprehension.
8. After 3 or 4 intensive lessons, insertion of one long lesson, too long for translation,—even from the very start.
9. Help from the teacher: background of book and author; reading in French to the class; interpreting in French for the class; questions.
10. Home reading book.

B. Help them to love to read, by:

1. Freedom and opportunity to browse, attending or avoiding detail.
2. Encouraging enjoyment, suggestion, background.
3. Emphasizing "how fondly", which develops "how much".
4. Interpretation; discussion of idioms; study of vacabulary.
5. Translation of only occasional difficult passages.

6. Apportion assignment out to individuals, or to small groups.
7. Browsing about my bookshelves, making their own selections.
8. "Petit Journal"—Vitalia.
9. Laboratory work—individual research and report on subjects or activities concerning things French, selected by the pupil himself.

The paper was discussed and suggestions were added by Miss Helen Machan, Mattoon High School. Additional remarks were made by Professors T. E. Oliver and D. H. Carnahan, University of Illinois, and by Miss Doniat.

The second paper was "Conducting a Reading Class in Spanish", by Miss Elsa Scheerer, Nicholas Senn High School, Chicago. The paper follows:

Conducting a Reading Class in Spanish

The most worth while result of teaching Spanish in the high school is the creating of a reading habit. The best thing our students get from us not to know how to talk nor how to write, but to be able to read some Hispanic work. Our highest purpose should be, that out of every class some will be influenced to use their leisure time in the future with a Spanish book. This is the most lasting attainment. The other faculties depend on outside influences and stimuli for continuance. Even if it were possible to conquer the obstructing conditions of overcrowded classes, lack of time, insufficient opportunity for individual practice, and turn out an able conversationalist in Spanish, we should still have to combat the future. After he has departed from his class, and the stimulating competition of other ambitious talkers, he will need such outer forces as clubs, associates who speak Spanish, native friends, or the rare advantage of residence in a Hispanic country, to continue and even develop his conversational ability. It is even more difficult to keep up his writing practice without actually having correspondents with whom to continue the exercise; or using Spanish as a medium in some business activity. These external aids, promoting the continuation of the use of Spanish fall to the lot of but few of the more earnest of our pupils. We are hardly justified in thinking that writing and talking can be of as much future benefit to a high school student as being able to read Spanish with a reasonable amount of ease, but with a great deal of pleasure, will be to him.

The teaching of reading, then, is the fundamental problem of our course. Learning to talk and write is essential, as no one can have as great a pleasure in reading Spanish as he who can immediately follow up the sound and sight of words with imagery. Having to transcribe what one reads by means of a second language is laborious mental drudgery and a great waste in warmth of feeling. So although I hold the teaching of composition and conversation subservient to the teaching of reading, I could not easily dispense with them. I could not expect spontaneous participation in the reading period, a reaction that is the result of a quickened response because the student can accompany the author's ideas and expression, with thought and reasoning in the same language.

As a means of approach in teaching reading, a knowledge of phonetics is indispensable. The teacher, by careful study of the principles discussed and illustrated in the works: "Pronunciación española" by T. Navarro Tomás and

"Elements of Spanish Pronunciation" by J. Moreno-Lacalle, is far better fitted to teach reading than if he depends on imitation in guiding the student. These are the elements of speech that are essential in learning correct Spanish pronunciation:

1. The five vowels—i, e, a, o, u. Open and closed e and o.
2. The consonants, giving special attention to such particular cases as: b, d, z, g, r, rr, t, j, p, n, l, c. Then the cases of consonants affected by position (before or after other consonants) as: n before c, qu, j and g; n before v, b, p, m; s before m, d, h, n, b; b after n, m.
3. Then discuss and practice diphthongs, triphthongs, also their formation as a result of elision.
4. Syllabication.
5. Accentuation.
6. Linking words in a sentence, observing these rules:

The final consonant of one word is carried to initial vowel of next word; final vowel before identical vowel is elided; final consonant before identical consonant is elided; a weak and strong vowel in linking words form diphthongs or single syllable.

7. Orthographic changes.
8. The logical division of speech in stress groups and breath groups.
9. Finally the discussion and practice of intonation and inflection.

It would be ridiculous to suppose that all these phonetical principles can be taught at once. The basic sounds should be presented and practiced and then the study of phonetics should be continued as a regular portion of the reading period until the class shows a reasonable command. Under normal conditions it is necessary to revert to one or more of the aforementioned principles during at least the greater part of the four year high school course of Spanish. I think the first three lessons should be entirely devoted to phonetic practice; after that the teacher can follow a program that he thinks suited to the peculiar needs of his own class problem. As our classes are sometimes very large, and as we cannot all resort to grouping students by scientific tests, we must perforce make individual application as we see fit. I do not know of any greater aid in teaching reading than the graphic presentation of speech sounds by means of phonetic script, and diagrams of lines to show intonation. We are particularly fortunate in Spanish in having the division of words into syllables, accentuation, and the pronunciation of vowels and consonants governed by fixed rules. As there are few variations possible, we can expect that after a certain amount of practice a child will be able to pronounce any words correctly. In fact since we are so blessed with these mechanical aids and devices, we should consider how to read as the less important phase of the problem, and emphasize the interpretation of the content of the reading matter. So after the elementary students have mastered the fundamentals of speech, and at least know how to divide a word, how to pronounce each syllable, and where to stress the right one, then I think the time has come to cease reading in class for the practice only. It is impossible to expect that the more difficult matters of say, dividing the sentence into breath groups and stress groups, and approximating the intonation of Spanish speech, be mastered until the student has more knowledge of Spanish, a readier command of vocabulary, and consequently enough feeling for the thought of the sentence to be able to perform these phonetical exercises. I should say that after the earliest lessons of drill, more is gained from short, individual oral readings than from long. I often use a sentence as a unit, but strive to get each student to feel that his sentence must be as correct as possible. Greater interest can be maintained and I notice there is a keener participation by all members of the class. As our sections in beginning Spanish are usually far too large for the best scientific methods I think that whatever plan gives the greatest opportunity to all is to be advised. And then we are not teaching oral expression nor public speaking,—our ideal is to get the content and to lay

the foundation of a reading habit. Just how much time should be spent on oral reading during class time is a question that depends on the teacher and on the class. I don't think that practice in reading should ever be dropped entirely even in fourth year classes, although it does seem to me that it is essential to every reading period. I believe that the reading assignment can be recited in other useful ways. Effective and correct oral reading, then, is not an end in itself but only a means to greater appreciation of a fine piece of writing. I have often heard people say that what they remembered most gratefully of their work in modern language classes was some beautiful passage read and discussed in class and the memorization of poetry. But the content of the reading selection, be it novel, drama, story, essay, or elementary selection, is the thing! Is it not possible that we can teach our students what we are expected to do and yet not kill the spirit of what may be an exquisite work? For example if they are studying "José" of Palacio Valdés, should not the reading of it create an unforgettable picture of the grim life of fisher folk and their struggle against a constantly changing sea that yields food, but that takes life; the great nobility in the soul of José; the striving for love and the joy of existence? The powerful forces of nature are balanced by a rush of activity and a bold opposition of hard, rude character that bring out the fineness of José with an almost overwhelming sweep of contrast. The spirit and significance of the reading matter are of far greater importance than the cold analysis of the passage, the acquiring of so many new words and idioms, so much bare knowledge of the form and structure. These last will be forgotten by the students—probably, at least, most of them,—but the greater understanding of human nature, or the glimpse of beauty in nature or in soul, or some wise thought of the author, these go into the student's character; they must weave some trace into the dullest and most unresponsive feeling.

As to actual class room procedure, however, I believe one must develop a technique that is adapted to the general type of students. The teaching of reading, with the best understanding and the highest appreciation as the aims, must be earnestly studied and planned and the whole course kept in mind. In elementary classes, where almost every expression and many words need explanation and much repetition, it is a great help to stop when a complete idea has been read. This can be made clear by having the teacher ask questions in Spanish that lead to better understanding, or by drawing on the blackboard an illustration or a diagram to bring out the point. This "chalk talk" method of explaining a difficulty, or getting the students to talk is a splendid means of saving time; and for encouraging thought in Spanish is well worth any trouble. Another method is to point out in the room the object, color, or material; or point out on the calendar, the date; or write on the board, the number; or show by means of a picture an abstract idea, or an activity difficult to reproduce in the schoolroom, or to show an object not in the room, etc. If once the proper mood is established the students will go through any pantomime to help out; in fact in elementary classes there should be an absolute forgetting of self, and just a state of absorption. There must be constant dramatizing, both by teacher and pupils. So far as the elementary reading class is concerned and the students are of first year grade, I think the reading period should be conducted in Spanish entirely except where the teacher's judgment decrees otherwise. As for translation, this is another problem.

The questionnaire is a great help, too, I think. The best results can be expected from a written preparation in answering the questions based on the reading assignment. We have a number of different ways in using a questionnaire; the questions and answers can be written on the board and followed by conversation in Spanish, because a good question usually leads to associated ideas and train of thought that seeks outlet in a spontaneous expression of opinion. Sometimes one student can read the questions, one after another, to the class, calling on a boy and girl alternately, who give the answer from memory. Or the students of one row can read the questions to the students of another row,

standing before the class. The teacher, too, should read some of the questions each time, as in Spanish the intonation of the interrogative sentence is very difficult to acquire. But no matter how we go at it, the answers always are spoken from memory, with book closed and paper on the teacher's table. In case a reading text is not supplied with a questionnaire, I think a teacher is wise if he occasionally assigns ten or more good questions that lead to close scrutiny of the reading, and that perhaps give a more synthetic idea of what was read than any other preparation could. Sometimes let the students get up an original questionnaire. But at all events let us set a premium on careful answers that show thoughtful reading of the text, and good judgment. We can give a habit of close reading if we require exact details.

Another means to this end is careful translation. Not only does this require exact reading, however, but also a fine sense of distinction, for the student has the added problem of selection. The translation must be in correct and effective language, and must never depart, if possible, from the original meaning. In order that accuracy and a good taste in choosing words may be developed, I believe a short assignment is always preferable to a long one. Giving up part of the reading period to translation seems sometimes like disturbing the Spanish atmosphere, or rudely breaking a habit of requiring Spanish only as the means of oral expression in the class. The need of occasional prepared and sight translations, however, is apparent; there are times when only by this means can we gauge the comprehension of the student, especially the beginner. Again, not only a word, but a group of words, an idiom, or probably a tense of a verb, need translation to convey the exact meaning to some pupil. Then, as an aid in drilling these same troublesome idioms, verb tenses and so on, we often help fix them in memory by giving the equivalent in English and expecting a reading translation in Spanish. By judicious use, and by building up a wholesome attitude towards translation as a literary art when it is effectively done, we can add to the student's reading ability, and to his speed, and give him more enjoyment. Perhaps if a teacher wishes to emphasize translation as a major exercise, he had better select a wider range than a literary work could offer for this purpose; he could assign varied selections from catalogs, government documents, periodicals, science publications, and such readings of a more specialized nature. I think it is poor policy to devote a piece of literature to translation for the sake of practice only.

We hear a number of teachers speak of cross translation as a good device in calling for a reading preparation. Here again I think, we gain more if we vary the method. We can let one student read his English translation to another, who gives the Spanish for it with book closed and paper out of sight. Or one row can write the English sentence by sentence on the board, and others can give or write the Spanish.

Besides following up the reading with direct method of graphic illustration, and dramatizing, the questionnaire, and translation, we can call for the content of the reading assignment in classes where the students are capable of more fluent speech, by encouraging original discussion, and by retelling, or by summaries, oral and written, and by analysises that border on literary criticism. In fact even in first year classes there can be some attempt at retelling the subject matter, provided it is simple. Writing résumés or giving the content from memory give needed practice in connected speech. I think most of us find that the narrative or expositive types lend themselves more easily to retelling than descriptive passages. It is beneficial to read or have read anecdotes, short stories, or some selected passage from a longer work just for the purpose of relating it again. Dramas and dialogues lend themselves to lively readings, and the former especially to interesting discussions, and analyses of character, motives, causes and effects, and permit different oral interpretations. The reading period may also yield time to dramatic presentation. Some teachers get very good results by letting the pupils write original dramatizations based on stories read in class.

As we lack time to read as much as we should like, we must consider home reading as a necessary supplement to class reading. In less advanced classes, we can assign parts too long for detailed study in school; or in intermediate sections, we can take a work like "María" by Isaacs and divide it into part class and part home reading. Then in more advanced sections, we can assign a novel or a drama entirely for outside work. It is advisable, however, to select reading of an easier grade for the home study. The teacher can examine the content of this home reading by calling for a written report based on questions previously given, or by hearing an oral report, or by oral or written quiz. Care must be taken that we really probe the content, and that we do not accept a second-hand résumé as honest reading.

As for the vocabulary, and the important idioms, there are such useful aids as notebooks and library cards kept for the purpose of review and drill. Occasional review in class, spelldowns, a test to see who has retained the greatest number, all lead to refreshing the memory. Exercises based on the subject matter illustrating grammatical principles, composition assignments on related topics, and in higher sections even an attempt at critical articles, all tend to strengthen the significance of the content. But there is danger of teaching the reading lesson too thoroughly and squeezing it of all joy. There is a first reaction to a fine piece of writing that may be disturbed by too cold and scientific analysis. Making the reading the subject of grammatical review, conversational drill, and the material for composition may make the student detest a lovely work, although he may gain in school room expression. Do you remember how Penrod got to hate New England writers because as a boy he used to see the pictures of James Russel Lowell, Longfellow, Whittier and the rest hang on the detested school room wall? We don't want to build the wrong associations, and defeat the higher purpose that makes art of our work. Our reading classes give us an opportunity, if we use much loving judgment, of being instrumental in arousing a habit of reading that should give our students in their future some of the most pleasant moments of their existence.

This paper was discussed sympathetically by Miss Virginia Melvin, University of Illinois.

Miss Olive Smith of Carl Schurz High School, Chicago, presented the paper **"Conducting a Reading Class in German."**

The student should receive five benefits:

(1) facility in understanding spoken language
(2) in speaking
(3) in writing
(4) in reading
(5) appreciation of German literature as a symbol of a living culture.

Translation and use of English in classroom should be reduced to a minimum.

For understanding give a short simple story in German to class for first few moments of the period.

Dictation aids in ear training. If the dictation comes from the day's lesson it should come at close of period.

The practical and modern demands of the language must be recognized.

Discussion of Miss Smith's paper was given by Professor Armin H. Koller, University of Illinois, as follows:

"Those who reviewed and discussed the first two papers here this morning were in accord with the respective readers of the papers. Harmony and peace prevailed. I do not wish to be the contrary person.

The paper before us is stimulating. It raises a number of large questions which it has itself no time to answer. It deals perhaps more with the byways than the highways, and attempts to cover too much ground for so short a paper. It seems to me that the title is too particular for the content and the content too general for the title. Instead of dealing with the devices, helpful as that may be, I should have preferred a direct and more limiting and exclusive discussion of the main topic, one that comes nearer to a more exhaustive treatment.

The question of translation is too summarily disposed of. Everyone agrees that the *old style* translation method must go. To taboo it, is another extreme. I believe the time has come for a re-examination of this question, a fuller re-investigation than has hitherto been the case as to what translation can or cannot do for us, in the light of our pedagogical experience and our particular needs and aims.

The aims of study are commonly stated to be (1) speaking, (2) writing, and (3) reading. Reading is the biggest end in view; the cultural aim must not be forgotten, it is the most important.

The paper emphasizes "facility in understanding the spoken language" and suggests that the first few minutes of the hour be devoted to "relating a short story or incident, employing largely a vocabulary already familiar." If that is done at all, I should say, use exclusively a vocabulary with which the students are already familiar. But what will one do with one's main work? Where will one get the time for it?

For about the last decade and a half, or a little over, since the direct method has come into vogue, it has been customary in *theoretical* discussions to flourish about speaking, facility in understanding, as the chief aims to be striven for, toward which all effort should be directed, and toward the attainment of which all known means should be employed.

It appears that the time is ripe for a re-searching into the meaning of the direct method. Every teacher accepts the direct method, provided it is his own. Any method of teaching developed in a foreign country, as for example the direct method particularly and principally in Germany and France, cannot be swallowed here *Haut und Haar,* as it were. At best, we have to adapt it to our own conditions, purposes, and requirements. Now, sufficient experimentation and experience would seem to be available for some sort of a stock-taking at least, as to how far we have gone and where we are today, and to sift our experience both in the light of achievement and of our present and future needs.

As to texts, the classics are one of our main goals. The works of Goethe and Schiller, Gotthold Ephraim Lessing's powerful work, *Nathan der Weise* where he, poetically and imperishably, posited the *Humanitätsideal* of the classical era,—our age and day stands in ever increasing need of the great humanizing lesson of this immortal work,—and other literature from the great classical period is, for one thing, what we are laboring for.

As to the practical and modern in texts, I believe first that we stand in need of revision of what we have, of eliminating from existing texts any matter eulogistic of the old Junker régime, and second, that in new texts, only material of proven literary merit should be incorporated, as we want here only the good and the best in German literature, not their prejudices, or strifes, or partisanships, political, or otherwise.

The paper mentions a number of devices which I desire to commend. They are: the assignment of special work to individual students, dictation, sight work, and some of the other suggestions, but especially the preparation of the lesson in class by the teacher before assignment to pupils. I would even go farther and lay still more stress on this kind of preparation.

I feel sure that we all enjoyed the witty language of the paper.

Professor Kenneth McKenzie, University of Illinois, discussed the vagueness of the direct method and the benefits of translation as the best test of accurate knowledge. He remarked that the three papers of the morning rather slighted translation. Miss Allin remarked that translation is undoubtedly more valuable for University than for High School students, and Dr. B. A. Uhlendorf, University of Illinois, supported this view.

Dr. B. A. Uhlendorf, University of Illinois, next read a paper on **"Prognosis Tests for Students of Foreign Languages."** The paper follows:

I was asked to speak to this assembly on the subject announced, not because I have experimented on a large scale with intelligence tests designed for our particular purpose, but chiefly for the fact that during my army service I attended the Schol of Military Psychology, and was engaged as Psychological Examiner until my discharge. Since this time I have followed with great interest the development and ramification of intelligence tests, especially the history of Stanford-Binet and Army Alpha and Beta tests, which, by the way, put us in position to make the almost unbelievable statement that the average mentality of the American, not counting Indians and negroes, is that of the eighth grade school boy.

One branch of the various tests for general intelligence are the trade tests. Of these almost a hundred were prepared for use in the army and in the work of rehabilitation. After the war, however, when the first German periodicals came over again, I found those on experimental psychology dealing to a great extent with intelligence and trade tests. When in the summer of 1920 our library asked me to analyze some of these publications for the *Readers' Guide to Periodical Literature,* I found that hitherto there had not been in use the specific subject headings necessary for such analyses. This goes to show how recent, but nevertheless widespread is the interest in ascertaining by a short-cut either general intelligence, or knowledge in a particular field or line of work (I need only mention Mr. Edison's more or less absurd, anything but scientifically prepared tests). An examination of a number of trade tests shows that in many cases they are not devised to test the candidate's ability to do a certain kind of work, but rather to judge on a scientific basis an individual's aptitude to learn that which is expected of him in performing his duties. This is true of the greater part of our language tests, which should, therefore, be divided into two classes, namely, prognosis tests also called pre-tests, or predetermination tests, and simply language tests. Of the latter there are available standardized tests for second year Spanish and French prepared by C. H. Handschin and published by the World Book Company. I shall confine myself to the former.

In the *Modern Language Journal* of October, 1918, Prof. C. H. Handschin of Miami University published an article entitled "A Test for Discovering Types of Learners-in Language Study." He divides the methods of learning a language into impression and expression, and further divides impression into seeing and hearing, expression into speaking and writing. A student may

learn best by any of the possible combinations, or his aptitude in any two may be about equal. To find a certain type of learner he has devised four distinct tests, i. e., sets of words and sentences which the subject is either to see or hear for a definite time or number of times, as the case may be, and then to either pronounce or write from memory. A certain time is given. The tests reproduced in writing are given in groups, the other two individually. One in each group is given in Esperanto with the English equivalent. The result was that Mr. Handschin obtained the highest grades in those two tests in which the subject perceived visually and expressed orally. These were preliminary tests, and the author made no claim to correctness in weighing and grading, since the number of students examined was but small.

The very fact that the higher grades were obtained when the student reproduced by speaking seems to point to the fact that the tests were not properly wighted, for I think every experienced language instructor will admit that better results are obtained by writing rather than by pronouncing language exercises, not only because the grading can be done more accurately, but also because while writing the student ordinarily pronounces his sentences either consciously or subconsciously, i. e., by automatic, non-volitional movements of the vocal organs. The very best results, therefore, are obtained if the instructor while preparing a new beginner's lesson with the class pronounces while the student reads silently. Thus both images are simultaneous, and as a German proverb says, *doppelt genäht hält besser.* Writing should be done as much as time permits. It is obvious, furthermore, that Mr. Handschin did not take into consideration the student's present knowledge of grammar, which is so sadly neglected in our grades and often even in our high schools.

These tests, however primitive they may be, started the ball rolling, and it was only four months later when Mr. Lawrence A. Wilkins, Director of Modern Languages of New York City, published in the *Bulletin of High Points,* issued by the Board of Education of the City of New York, a series of tests, which though in principle the same as those of Mr. Handschin, include also a grammar test. Both investigators wish their students to be divided into sections according to types of learners. While Mr. Handschin would teach each section in the manner by which it profits most, Mr. Wilkins suggests that each group be given particular training where it is needed most. The chief contribution of Mr. Wilkins, however, is the desire for elimination of the subjects rating lowest. Sixty percent he considers the borderline. His tests were given in a certain New York high school to 189 boys who had chosen to take Spanish. No one was eliminated for failure in the pre-tests, but when after four weeks of study an examination was given on the basis of which thirteen boys were dropped from the course, it was found after checking the grades with the scores of the predetermination test, that there existed a fair correlation. After verifying the validity of his prognosis tests in another school Mr. Wilkins felt sufficiently confident to advocate elimination of prospective language students after failing to pass the pre-test; for he claims we are in some cases fighting against an individual's native inability to learn a foreign language. When Mr. Wilkins says that about twenty percent of all students taking a foreign language have no aptness therefor, and should hence be excluded from the course, he puts the number a little too high. However, such cases do exist. I can refer to a man who did fair work in all other subjects, whom it is taking, however, eight semesters to do four semester's work in German, in spite of the fact that he was tutored part of the time. It will take him a year longer to finish his college work, when, by the way, he could have taken most of his language requirements in high school if German had been offered at the time. May I remark here that this man's failure seems to be partly due to his advanced age, for it is a well established fact that languages are learned best in younger years. The high school is the place to teach beginner's language.

Aware of the unfairness of expecting a candidate to respond orally in a foreign language in which he has had no phonetic drill, and realizing that the

use of English would be no indication of the student's probable capacity for a foreign language, Mr. Wilkins later eliminated the speaking tests, which put him at the same time in position to give the entire examination en masse. To the tests judging visual-motor, aural-motor, and grammar ability he added an exercise to test the faculty of retention. This examination was given to 335 candidates. Of the forty-nine that failed, twenty-five were allowed to take a language because their grade school records warranted it. Of the remaining twenty-four eleven were enrolled in Spanish because they could not be taken care of otherwise. Of these five failed outright at the end of the first term, the other six were borderline cases, the fate of whom was probably decided at the end of the second term. In another case where 252 pupils were examined, it was found that only in twenty-one instances did the relative score differ from the relative standing in elementary English, and the term's ratings proved that in eleven out of these twenty-one cases the elementary school record was reliable, while in the other ten the pre-test would have been the better criterion of judgment.

These records seem to indicate that grade school ratings in English grammar and composition are an excellent indication of what can be expected in modern languages. For experimental purposes this same test was given to approximately 500 girls, many of whom had registered for a course not requiring a foreign language. Of these 113 failed, a high percentage indeed, which, however, would have been considerably less had the test been given only to prospective language students. These scores were again compared with the English ratings, and it was found that on the whole the lowest test scores paralleled the lowest English marks. This fact, though not based on a very large number of cases, seems to furnish statistical proof for the justification of the remark that I, and no doubt many of you present, have made about language classes, namely, that students often come into our classes with such a deplorable knowledge of grammar that we feel at times quite discouraged. Whatever else we do, such students upon entering high school should either be advised to postpone their language study until they have a better foundation in grammar, or, if they want or need four years of language, they should be given special drill in grammar, either by the English teacher, or if necessary, by the language instructor.

While Mr. Wilkins' tests were tried out Prof. Handschin continued to experiment. He prepared a second set of tests, called pre-determination test B, which together with the old set may be obtained from the Departmnt of Intrior, Bureau of Education. He too, has abandoned the two individual tests, and offers only a seeing-writing test, a hearing test, and a grammar test. To make the pupils acquainted with the administration of the test he has prepared a preliminary exercise. The foreign language used is still Esperanto; the student, however, writes all his answers in English. The test having been tentatively standardized from 638 cases deserves well of being seriously considered practical working material. I believe that I have good reasons for saying this: First, while Mr. Wilkins administers his tests to prospective French and Spanish students by using the respective language, spoken as well as written, in dealing with students who have not the slightest knowledge of the pronunciation of either (needless to say the highest scores are made by the Spanish classes), Mr. Handschin makes use of Esperanto, which is either read by the subject or spoken by the examiner together with the English equivalent. The candidate, however, simply gives the English for the same Esperanto sentences given this time in different order. Second, Mr. Wilkins' memory test is superfluous. We can hardly speak of memory when the lapse of time is but a minute or two. The element of retention must by necessity enter into any but the grammar test. The only objection one can have to Mr. Handschin's test is that he has set the passing mark too low, it being only about 22 percent of the total possible score. He suggests, however, that school officers suit themselves as to how many pupils they wish to debar from language instruction.

Now permit we to take up the following question: How does any test that aims to foretell a pupil's possible success in a language (we do not have to confine ourselves to modern languages) fall short of being a prediction of actual success in class work? The tests do not judge: (1) mechanical memory; (2) will power, perseverence in effort; (3) habits of study, regularity, thoroughness; (4) mobility of vocal organs; (5) acuteness of aural perception. Nor is it an easy matter to prevent students from preparing for such tests, unless there should be in use many different forms (there existed five different forms of Army Alpha tests).

These are factors which must not be overlooked. Sueaking generally, however, great good can result from the use of prognosis tests. If they are administered rightly, and if all the records are forwarded to Mr. Handschin he will be able to improve upon their standardization, and thus every teacher will help to perfect a time and labor saving system, and contribute his part toward raising the standard of language instruction.

This paper was discussed by Miss Doniat. Professor Julius Goebel, University of Illinois, suggested that the tests are based upon alertness. He detected in them an absence of critical attitude and a tendency to snap judgments.

Afternoon Session

The first part of the afternoon was devoted to business. Miss Josephine T. Allin was elected a third member of the conference committee to succeed Miss Doniat, who expressed a desire to withdraw from the work. It was moved and carried that a committee be appointed to prepare a report on German texts similar to the reports on French and Spanish tests. Miss Rachel Breathwit, University of Illinois, and Dr. Uhlendorf were appointed to represent the Modern Language Section at the meeting of the Library Committee Saturday morning.

The first number on the afternoon program was the report on "**Reading Texts for the First Two Years in Spanish**". In the absence of members of the committee, the report was read by Dr. John Van Horne, University of Illinois. The report follows:

Reading Texts for the First Two Years in Spanish

The following list of texts available for use in the first two years of Spanish in high school is by no means exhaustive. It is merely a selection made by the committee of such books as have been found useful, with an attempt to qualify their merits and thus help others to judge of their value. Though the gradation as to difficulty is not specific and definite we have placed the texts in groups for first and second year work, arranging them in an approximate sequence from the less to the more difficult. Inasmuch as constant additions are being made to the lists of published texts, it is plain to see that new and better books may supplant those named at any time.

The committee has not undertaken to list or discuss grammar texts nor composition books, judging them worthy of a separate report. It should be borne in mind, however, that the use of a grammar text in the first two years

is presupposed. The size of this book, and the proportion of time devoted to the study of it will determine to some extent the nature and size of the reading text. The use of a long reading text with abundant exercises precludes the use of a long grammar. A separate composition book will hardly be of service in the first two years.

In a general way the committee favors the shorter reading text that can be finished in a semester to one of greater length. This is particularly desirable where classes are compelled to change teachers or schools during the year. Another reason for favoring the shorter text is that the change from one book to another tends to renew interest through the variety in subject matter and in its treatment.

The amount of exercise material thought right in a reader, as also its nature, is a matter that requires the consideration of the individual teacher. No doubt there is much to be gained by a variety of exercises, yet the resourceful teacher who coordinates the various activities of a class will prefer to prepare exercise with this point in mind. Sometimes greater success is attained with a class by suggesting work rather than by planning it for the pupils in such a way that no appeal is made to their initiative nor any tax put on their resourcefulness. Such exercises as require no thought on the part of a student prove boresome to him and result in a lessening of interest. The inexperienced teacher will welcome a book that provides a sufficient amount of good material to lead the pupil on in his study.

There are some who may object to our selection of books on the ground of their being unsuited to high school pupils. This may be true of "El Capitán Veneno" and "El Pájaro Verde". The subject matter of both these books is such that unless it can be handled properly, these books had best not be used. No teacher should use a book feeling that it is not interesting to the class or unsuitable for them to study. Unless there is a real appreciation of a book on the part of the teacher, it will not be easy to arouse the interest of the pupil, for the teacher's attitude is invariably reflected in the pupil. Though this is true of any piece of literature that might be selected for study, it is especially true of the two above named. It cannot be doubted that either of these books can be and is being successfully used early in the high school course.

Respectfully submitted,
Committee,
Lillian B. Weide,
Elsa Scheerer,
Edith Cameron,
Carl O. Sundstrom, *Chairman.*

Texts for first year use.

1. *First Spanish Reader, Aurelia Espinosa.* Pub. Benjamin H. Sanborn Co. 149 pages of reading, grammar exercises, and questions. 17 pages of English-Spanish translation. Price $1.28.
   The book is divided into two parts and is intended to be auxiliary to a grammar text. Comparatively simple reading matter. The language is useful, everyday speech. The author takes first the school-room, then the home, and then topics of Spain and Hispanic America. Some simple stories and folk lore as well as studies of Spanish literature are included. This book could be introduced early in the first year. It would take a whole year to complete. The reading lessons are short enough for one assignment and leave sufficient time for exercises or questions. The subject matter is very interesting, and told in a chatty, racy style.

2. *Lectures para Principiantes, Medora Loomis Ray.* American Book Co. 133 pages of text, 42 pages of review questions and vocabulary. Price $.92. A charming book for beginners in which the principal characters are an uncle, a nephew, and a niece. The former has commercial interests

in South America. The children, for love of their uncle, are deeply interested in Spanish. In this way, the lessons interchange with Cuban and South American subjects and useful everyday experiences at home. Besides containing complete vocabularies in both Spanish and English, each lesson is provided with short grammatical exercises, questions and translations. Its quaint illustrations add to its charm. One can easily speak well of the merits of a book which the pupils so cheerfully endorse.

3. *Cuentos y Lecturas en Castellano, María Solano.* Silver Burdette and Co. 106 pages, including vocabulary. Price $1.00.

   A comparatively simple book containing folk tales, fables, songs, and discussions of Spanish American topics. Varied and interesting exercises are found at the end of each lesson. The style of the book is such as to appeal to young children, and the atmosphere is thoroughly Spanish. A feature that will appeal to some teachers is the including of folk songs with the music as well. The book is brief enough to be finished easily in a semester, and the first 37 pages are confined almost exclusively to matter in the present tense.

4. *Reading, Writing, and Speaking Spanish. M. C. Dowling.* Amer. Book Co. 134 pages reading, grammar discussion, exercises and questions. Price $1.00.

   Very simple language. Cognates very noticeable. Few difficult idioms. Everyday vocabulary. Subject matter ranges from home life in the United States to Spanish life industry and geography. The book emphasizes child life. It is profusely illustrated. It can be used in junior high or with younger pupils in high school, being a grammar and reader combined. It can also be used as a reader and composition text.

5. *Elementary Spanish Reader. E. S. Harrison.* Ginn and Co. Price $.60.

   Folk tales retold in simple Spanish, anecdotes, fables, and six poems. The stories lend themselves to reproduction. There are illustrations, exercises, and questions. Good for supplementary reading.

6. *Primer Libro de Lectura, Gertrude M. Wash.* D. C. Heath and Co. 86 pages of text. Price $1.00.

   A series of lively descriptions and dialogs, illustrating principally the everyday life of two Spanish families whose respective children are cousins. Its merits are a simple style and a useful everyday vocabulary. The movement is rapid and the interest sustained throughout. Many simple poetic gems are scattered throughout the book. Well-graded, varied and interesting exercises are included in each lesson. Those involving word-building suggest initiative on the part of the pupil. Suitable for first semester work.

7. *First Spanish Reader, Roessler and Remy.* American Book Co. 250 pages, including vocabulary. Price $.60.

   A small reader for first year work containing very simple lessons on practical topics at the beginning, and good stories later on—not fairy tales, but of a kind to interest the high school student. Not one of the latest, but a deservedly popular book. There are proverbs and poems for memorizing and a few songs with music. Abundant questions are supplied to aid the inexperienced teacher, but no written exercises. Suitable for the second half of the first year.

8. *Primeras Lecturas de Español, Dorado.* Ginn and Co. 243 pages of text, exercises, and translation. Price $1.00.

   This text could be used in junior high school with younger pupils. Very interesting reading matter forms the basis of the exercises. The spirit of the text is childhood, and so the reading is of special significance to

one under fifteen. Contains many songs and rhymes, anecdotes, games, and charming stories. There is a noticeable Spanish atmosphere. The language is free from difficult idioms. Much of the matter is of a nature to encourage retelling in class. The text incites activity with its many suggestions for doing things while speaking Spanish. The questions can generally be answered from memory. The exercises afford pleasure. The book is illustrated with pen pictures of a Spanish flavor. There is a supplement of grammar rules and forms with the discussion in English. It is possible to use this book without the aid of a grammar text if the teacher wishes to develop the suggestions. It can be recommended as a direct method text.

9. *A Spanish Reader, John M. Pittaro.* D. C. Heath and Co. 215 pages of text and 83 of vocabulary and verbs. Price $1.40.

   The Spanish text-book which does not attempt to acquaint the pupil of today with the marvellous possibilities lying dormant in South America is rare. One of the best in this class is Pittaro's Spanish Reader. The book can be used early, and treats not only of Spanish and South American topics, but has many interesting stories and descriptions of those lands by well known authors. The first ten pages are devoted to classroom and grammatical expressions, and here and there throughout the book are proverbs and necessary everyday phrases to be committed to memory. At the end of each lesson is a "cuestionario". Attractive illustrations are an addition to the book. An appendix of 14 pages is devoted to the principal parts of the most common verbs.

10. *First Reader in Spanish, Rudolph Schevill.* Ginn and Co. 110 pages including vocabulary. Price $.72.

    A beginning reader for advanced pupils in school, i. e., those who are more mature or have studied another foreign language. It does not offer a simplified text, the content being historical and telling of incidents in the life of Charlemagne, of Henry IV., Charles III. and others, and describing famous battles. A book that will appeal to some teachers, but not well adapted to a class of beginners in high school.

11. *First Spanish Book, Lawrence A. Wilkins.* Henry Holt and Co. 173 pages of reading, grammar (in English), questions and exercises. Price $1.24. 14 pages of English-Spanish translation included.

    This book can be used very well as a grammar and reading text combined, introduced at the very beginning and used throughout the first year, perhaps supplemented with an easy play for extra reading. The subject matter ranges from the school-room, home, and everyday life to reading based on Spanish life and geography, including some reading of a literary nature. It is pleasing, generally simple, and idiomatic. The language is everyday, useful Spanish. The grammar principles are basic and essential for first year work. The subjunctive is introduced toward the end of the text, but not emphasized. The exercises are especially good for drill on grammatical principles. Because of an endless variety, they are never stale. The illustrations are pleasing.

12. *Beginners Spanish Reader, Lawrence A. Wilkins.* Henry Holt and Co. 305 pages in all. Price $1.48.

    By the same author as the above, but more difficult, being suited to a more mature class or for second year work. This is also a splendid book, containing excellent material in simplified Spanish. The reading is well graded. The first lessons are entirely of constructed material, dealing with the surroundings and daily experiences of the student. Later the life, customs, history, and traditions of Spanish-speaking peoples are treated. There are two stories in dramatized suitable for

school performance. This book is too long for one semester and may be carried over from the first year into the second. Contains good exercises of a varied nature and pedagogically sound. The inexperienced teacher would find it an unusually helpful book.

Texts for Second Year Use

Among the above there are some that may well be used in the second year instead of the first, as is suggested in the discussions of numbers eight and ten. The following are especially adapted to use in the second year:

1. *Elementary Spanish-American Reader, Bergé-Soler and Hathaway.* Benj. Sanborn. 300 pages of reading, 40 pages of questions and translations. Price $1.24.

   An account of the travels of a Boston family in South America. Their interesting experiences are told in simple language, and lend themselves easily to retelling. It is an instructive reader, giving much valuable information, descriptive and technical, about Hispanic America. There is no narrative matter other than that of the events in the travels of the family. The illustrations are reproductions of photographs. There is a map of South America.

2. *Anécdotas Espanolas, Philip Harry.* Allyn and Bacon. 165 pages including a list of idioms. Price $.80.

   A collection of one hundred anecdotes of a varied nature each of which is followed by a group of questions in Spanish. Excellent material for conversational drill and for club work. Can be used as translation exercises and for composition. Recommended as a supplementary text in the second year.

3. *A Spanish Reader, Hanssler and Parmenter.* Chas. Scribners Sons. 198 pages in all. Price $1.50.

   This is a book containing a great variety of interesting material, including anecdotes, proverbs, poems and letters in Part I, while Part II is composed of selections dealing with Mexico, Central and South America, and Part III illustrates mainly Spanish art and literature. There are numerous exercises throughout, furnishing drill in grammar and idiom. An excellent appendix on verbs is added.

4. *A Second Spanish Book, Lawrence A. Wilkins.* Henry Holt and Co. 400 pages in all. Price $1.48.

   A book intended for use throughout the whole second year of high school work, and providing in one volume all material required. The reading is interesting and practical, dealing with descriptive and historical subjects in great part. There are definite grammar lessons, taught inductively, and splendid exercises based on the reading in which the grammar taught is made a part. Good memory passages are also provided. With all of this, there is abundant material for a year's work in the one book. The vocabulary is particularly good, containing Spanish idioms and synonyms, as well as specific English meanings that occur in the text. A teacher using this book as the author suggests and covering the work thoroughly will have accomplished a good second year's work.

5. *El Príncipe que Todo lo Aprendió en los Libros, Benavente.* World Book Co. 42 pages of text, followed by a vocabulary. Price $.96.

   A delightful little play that appeals strongly to high school pupils. It has the advantage of being brief, and is full of humor, romance, and idealism. It is simple enough to provide an easy break at the transition point from reader to literary text. At the end of the book there is

a series of composition and conversation exercises covering the entire text. The notes are in the right place—at the foot of the page. Irregular verb forms occurring in the text are listed in the vocabulary.

6. *El Pájaro Verde, Valera. Edited by M. A. DeVitis.* Allyn and Bacon. 150 pages in all. Price $.80.

   A highly colored story of oriental atmosphere, always popular, and of a length that makes for concentration. The notes are unusually abundant and a great quantity of good exercises provided for conversation and translation. There are two appendices: the first is a list of irregular verbs with synopses of forms, and the second is a list of idioms taken from the text with exercises based on them, radical changing verbs with exercises, and a treatment of the subjunctive. On the whole it is a well made book, and should provide work for the first semester of the second year if supplemented by some outside reading.
   There is also a good edition of the same story published by Chas. Scribners Sons, edited by J. Siegmeyer. It has 69 pages, price $.64. This edition has a good "cuestionario" and a splendid vocabulary.

7. *Amparo, Escrich, Edited by Ray and Bahret.* American Book Co. 150 pages of text, with additional pages of notes and vocabulary. Price $1.00.

   A delightful story by this well known juvenile author of Spain, that is sure to appeal to high school pupils. The edition is abundantly supplied with direct method and grammar review exercises, and is well suited to beginning second year work, as the style is simple and direct.

8. *El Capitán Veneno, Alarcon, Edited by Percy Burnett.* Benj. Sanborn Co. 150 pages of text, with notes, exercises, and vocabulary. Price $1.28.

   A standard story whose delightful humor has made it popular for many years. It is not as easy as some others, and the teacher's assistance will be needed quite often. The edition specified has excellent exercises of questions and translation, and will be found an improvement over the older ones still extant.

9. *Sierra's El Palacio Triste and Benavente's Ganarse la Vida, Edited by Medora L. Ray.* Ginn & Co. 45 pages of text with exercises and vocabulary. Price $.72.

   Two interesting plays, well suited to high school pupils. The first is delightfully humorous. The second has a strong human appeal, yet is not too sombre for boys and girls. There are a variety of interesting exercises providing for grammar and vocabulary review. The dual vocabulary: English-Spanish as well as Spanish-English is a special feature. It is a book that would appeal through its brevity.

10. *España Pintoresca, Marcial Dorado.* Ginn and Co. A veritable guide book through Spain in story form. 332 pages. Price $1.12.

11. *María, Jorge Isaacs, Edited by H. Keniston.* Ginn and Company. 127 pages of reading and five of Translation to Spanish. Price $.54.

    Can be used with a class that reads with ease fairly simple Spanish. The edition divides the text into thirty seven chapters of not over three pages, making it easy to assign lessons that are complete units. The language is simple, lyrical and beautiful, entirely free from difficult idioms. Occasional South American terms and idioms are taken care of in the notes. The novel is frankly emotional, but is beautiful and clean. There is much atmosphere and tone color, that creates a feeling for Colombian plantation life. If the teacher responds to this book, he can get a sympathetic class attitude. Macmillan and Co. have a good edition of this book with abundant exercises.

12. *Trozos Modernos, Marcial Darado and Ray.* Ginn and Co. 64 pages of prose, 8 poems, and two plays. Price $1.12.

    This lively little reader gives a feeling for contemporary Spanish literature and for contemporary Spanish thought and spirit. There are lively illustrations, excellent notes, "locuciones", exercises on the text and grammar, and translation passages. It could well be used in the advanced semester of the second year.

13. *Easy Spanish Plays, Ruth Henry.* Allyn and Bacon. Price $.80.

    Eight short plays that can be performed by pupils with but little necessary equipment. The language is extremely easy. There are also suggestions for organizing a Spanish Club and a list of parliamentary terms and usages. Can be used with students in first or second year.

14. *Spanish Tales for Beginners, E. C. Hills.* Henry Holt and Co. Price $.60. 298 pages of good stories by standard authors, with good exercises and a vocabulary. A good book for second year.

The next paper was the report on French texts, read by Professor Oliver. The report follows:

Report of the Committee appointed at the 1921 High School Conference to draw up a list of graded French texts for the High School Course of four years. Committee: Josephine C. Doniat, Florence A. Lucas, Jennie S. Shipman, Franck Louis Schoele, Thomas E. Oliver.

The following report combines the experience of the whole committee, and even where one member expressed a decided preference for a text, that text has been included. Comparison was also made with a "suggested outline" prepared by Laura B. Johnson which appeared in the October, 1922, Bulletin of the Wisconsin Association of Modern Foreign Language Teachers. There was a decided agreement between this outline of Miss Johnson and your committee's report. Certain features of the Wisconsin outline have been incorporated in the following.

The committee does not recommend any definite order in the list of books. We leave this to the judgment and convenience of the individual teacher. This is particularly true of the longer lists for the third and fourth year. We simply recommend many books that have actually met the test of classroom experience in the hope that this experience may prove a help and a guide.

Intensive reading, carefully prepared by the pupil and supervised by the teacher should be the guiding principle of the class room work particularly in the third and fourth year. No unfamiliar grammatical or syntactical construction should go unexplained. Constant watchfulness should be the keynote. Idioms, exceptions to pronunciation and other rules, must be made clear. Yet it must not be forgotten that the cultivation of the enjoyment of reading is the chief purpose and that this purpose must not be buried under a mass of grammatical explanation.

In the outside reading the emphasis is elsewhere. The pupil should be encouraged to read rapidly rather than with painstaking thoroughness. His speed will increase in proportion as the careful classroom work is well done. Hence it seems advisable that the outside reading at any given time should be similar in nature and content to the class work, in fact even by the same author. No minimum, or at least no maximum, should be laid down. Since the purpose of the outside reading is to create a love for reading compulsion should not be present except in the form of extra credit that may be granted for excellence of reports on the work. As far as possible pupils should be

allowed to choose the type of reading, for instance as between novel or drama, since the contrary principle might chill their ardor. It must always be remembered that pupils will vary greatly in their willingness and their ability to do this outside reading. As a warning against a possible abuse, we suggest that books be chosen which are not readily found in English translation, since the whole purpose of the reading would be defeated if translations were used. We know by experience that the lure of additional credit will sometimes lead to this type of dishonesty.

Once more we are confronted by the fact that the personality of the teacher is all important. An enthusiastic teacher will soon inspire pupils to a real love of French literature; an indifferent teacher will fail to do so.

First Year Reading

Petits Contes de France—Méras and Roth. American Book Co. A book of simple French stories, making use of representative historical and traditional backgrounds. The subject matter includes fairy tales, folk lore legends of army and history, with a map of France and lists of words arranged for word drill. Paragraphs of questions on the text adapt the book to the Direct Method. 120 pages.

Le Beau Pays de France—Spink. Ginn & Co. Descriptions of provincial customs, stories of troubadours, historic and heroic tales, narratives of the Great War, a group of folk songs and the Marseillaise and two short plays. The book is adapted to the Direct Method by questions, based on the reading matter and exercises laying stress on grammatical constructions.

Le Premier Livre—Méras. American Book Co. Sixty lessons, designed to cover the first half year, containing successive chapters of Malot's Sans Famille, and accompanied by questions and exercises with work in conversation, grammar and composition. The book is intended to be an elementary reader and grammar combined.

Histoires et Jeux—Barnes. Ginn & Co. Simple stories, songs, games and plays. The stories can be dramatized.

Elementary French Reader—Roux. The Macmillan Co. Carefully graded selections, some from well known French authors. A questionnaire in French follows each story and a group of seven poems and a treatise on verbs are found at the end.

Le Chevalier de Blanche fleur et autres pieces—Hutchinson. Heath. Six little plays, suited for early reading.

Pierrille—Claretie. Henry Holt & Co. A charming and simple idyl of the Midi, suitable for advanced first year or beginning second year.

Le Folk Lore an Village, An Elementary French Reader—Schoell. G. P. Putnam's Sons, 1922. A very good collection of simple folk talks. For late first year or early second year.

Suggestions for Intensive Reading in the Second Year French Class

1. Histoire de France—Lavisse.
   D. C. Heath & Co., 196 pages.
   Résumés and questionnaires. An interesting and simple narration of the vital facts of French history. Short anecdotes bring out clearly the characteristics of the great historical figures. The illustrations are clear and interesting and help to fix events and places described in the text. This book will give a pupil the historical background which he may need at this stage of his development.

2. Le Petit Chose—Daudet.
   (1) Ginn & Co., 92 pages.
   Notes, questions, exercises, vocabulary.
   (2) D. C. Heath & Co., 124 pages.
   Notes, vocabulary.
   The first part is almost wholly autobiographical. It gives a very vivid picture of Daudet's early struggles and poverty. The unhappiness of the poor little pupil-teacher in the boarding school in the Cevennes mountains is very touching. What joy for him and the pupils when he goes to Paris to live with his brother Jacques!

3. Contes Choisis—Daudet.
   MacMillan, 150 pages.
   Fourteen of the very best of Daudet's short stories presented with explanations and exercises.

4. Neuf Contes Choisis—Daudet.
   Holt & Co., 93 pages.
   Notes, composition exercises, vocabulary.
   These stories are direct in their appeal, and they are written with the simplicity and clearness of style of which Daudet was master.

5. Le Tour du Monde en Quatre-vingts jours—Jules Verne.
   Heath & Co., 159 pages.
   Notes and vocabulary.
   This book, perhaps the most popular of all Verne's books, has passed through more than eighty editions in France alone. It was dramatized and the play was a great success. The story of the eccentric Phileas Fogg's trip around the world in eighty days still thrills classes of American boys and girls.

6. L'Abbé Daniel—André Theuriet.
   Scribner's Sons, 155 pages.
   An excellent book for the teacher who believes in the direct and intensive method.
   It is the story of a sensitive lonely man, who renounces the world when the girl whom he loves marries the other man. He takes upon himself the task of educating an orphan boy and the daughter of his former love. In the end he has the great joy of seeing these children of his mind and spirit married to each other.

7. L'Abbé Constantin—Halévy.
   (1) Allyn & Bacon, 152 pages.
   Illustrations, notes, vocabulary, exercises.
   (2) Heath & Co., 189 pages.
   Notes and vocabulary.
   (3) American Book Co., 285 pages.
   Illustrations, notes and exercises.
   (4) Ginn and Company, 194 pages.
   Notes and vocabulary.
   (5) Holt and Company, 157 pages.
   Notes, vocabulary, direct method exercises.
   The style of this ever popular book is simple and easy. The abbe, his god-son, Jean, Susie and Bettina are general favorites. From this book we get a beautiful picture of simple village life which centers in the château and its châletaines.

8. Le Voyage de M. Perrichon—Labiche et Martin.
   (1) American Book Co., 87 pages.
   Notes and vocabulary.

(2) Allyn & Bacon, 85 pages.
Illustrations, notes, vocabulary, exercises.
(3) Heath & Co., 134 pages.
Notes, exercises, vocabulary.
(4) Henry Holt & Co., 91 pages.
Notes and vocabulary.
(5) Ginn & Company, 143 pages.
Notes, exercises, vocabulary.
A play in four acts, picturing a nouveauriche on his travels. It makes delightful reading in class, induces study of character and teaches many of the expressions used in travelling.

9. La Poudre aux Yeux—Labiche et Martin.

(1) D. C. Heath & Co., 70 pages.
Notes and vocabulary.
(2) Henry Holt & Co., 91 pages.
Notes, vocabulary, direct method exercises.
(3) MacMillan & Co., 122 pages.
Vocabulary and notes.
(4) Allyn & Bacon, 80 pages.
Illustrations, notes, vocabulary, exercises.
(5) American Book Co., 111 pages.
Notes, exercises and vocabulary.
A play consisting of two acts. It causes many a good laugh in class, while teaching that it is foolish to try to appear what one is not. The dialogue is fluent and contains many common idioms and everyday expressions.

10. Les Deux Sourds—Moinaux

Heath & Co., 31 pages.
Notes and vocabulary.
A one act comedy, full of fun and action.
The French is simple. This little play as well as "Le Voyage de M Perrichon" and "La Poudre aux Yeux" can be studied with a view of playing them before the "Cercle Francais".

11. Fifty Fables—La Fontaine

American Book Co., 91 pages.
Notes and vocabulary.
The fables, with some of which the pupils are already familiar in English, could be used for dictation, illustrated in pen and ink, made into playlets and given before the "Cercle Francais".

12. Sans Famille—Malot

(1) Heath & Co., 176 pages.
Notes, vocabulary and exercises.
(2) Longmans Green & Co., 156 pages.
(3) Allyn & Bacon, 113 pages.
Notes, vocabulary and exercises.
A fascinating story of a foundling and his trip over France with an old broken down Italian singer, his troupe of trained dogs and Joli-Coeur, the monkey. At the end Remi finds his aristocratic English family and everyone is happy forever after.

13. Morceaux Choisis—Halévy. Holt.

Outside Reading for Second Year

1. Contes du Pays de Merlin—Van Buren
   MacMillan & Co., 105 pages.
   Delightful tales of Brittany.
2. Paris d'Aujourd'hui—Schoell
   Henry Holt & Co., 116 pages.
   A Book which gives a good insight of Paris and its environs as they are today.
3. Un Mariage d'Amour—Halévy
   Heath & Co., 40 pages.
   A pretty love story, easy to read.
4. Le Chien du Capitaine—Enault
   Heath & Co., 142 pages.
   The story of a man's love for his dog and the love of the dog for his master.
5. Le Petit Journal—16 numbers a year
   Published by Doubleday & Co., Garden City, N. Y.
   A review of the press, published twice a month from October through May, reprinting selections from current periodicals of France.
   A booklet published by the same company gives suggestions for the class-room use of "Le Petit Journal."

Suggested Material for "Le Cercle Francais"

1. French Songs—Ballard
   Charles Scribner's Sons.
2. Chants de France—Jameson & Heacox
   D. C. Heath & Co.
3. Fifteen French Plays—François
   Allyn & Bacon.
4. Easy French Plays—Benton
   Scott, Foresman & Co.
5. Dramatic French Reader & Grammar—Ashleman
   A Flanagan & Co.
6. Rosalie et le Chauffeur—Maurey
   Ginn & Co.
7. Episodes en Action—J. Stuart Walters
   E. P. Dutton & Co.
8. For a small group—The Game of French Verbs
   Published by Lionel Mathews, Los Angeles, California.
9. Si nous Dinions (a conversational game)
   Published by the New School of Conversational French, Fine Arts Building, Chicago.
10. Scenes of Familiar Life—Frazer
    MacMillan & Co.
11. Petit Recueil de Chants Français (Large edition $2.25, Small edition $.90).
    Oxf. Univ. Press.
12. Le Cercle Francais, par R. P. Jameson, Oberlin College.
    (Twenty-five cents. For sale by the author. A useful pamphlet telling how to organize and conduct a *Cercle*.)

Material for French Clubs

For recitation or dramatization:

1. Short Stories for Oral French—Ballard
   Chas. Scribner's Sons
2. French Anecdotes—Harry
   American Book Co.
3. French Anecdotes—Giese & Cool
   D. C. Heath & Co.

For short plays:

1. Fifteen French Plays—François
   Allyn & Bacon.
2. Drames et Comédies—Duprès
   American Book Co.
3. Scenes of Familiar Life—Frazer
   The Macmillan Co.

Miscellaneous Material:

1. Le Petit Journal
   Doubleday Page & Co.
2. Le Monde Français—Cougnard-Stoesser
   Francis Parker School Press, Chicago.
3. Chansons, Poésies et Jeux—Gay
   Wm. Jenkins & Co. (Now Brentano's).
4. Chants de France—Jameson & Heacox
   D. C. Heath & Co.

An excellent collection, arranged for classes and clubs. The variety of its contents may be seen from the following chosen at random from its table of contents: La Marseillaise, Le Chant du Départ, Madelon, Au Clair de la Lune, Cadet-Roussel, Ça Ira, Le Roi d'Yvetot, and a short collection of love songs, hymns, and Canadian songs.

Material for Third Year (Class work—300-400 pages)

Tartarin de Tarascon—Daudet
Ginn; Heath; American Book Co.

Tartarin sur les Alpes—Daudet
Holt.

Un Mariage d'Amour—Halévy
Ginn; Heath.

Le Petit Chose—Daudet
Ginn; Holt; Heath.

La Mare au Diable—Sand
Ginn; Heath; Scribner's; American Book Co.

Quarter-vingt-treize—Hugo
Heath; Ginn.

La Petite Fadette—Sand
Heath; Holt.

Récits et Contes de la guerre de 1870
Bruce; Holt.

Contes Choisis—Maupassant
Ginn; Holt; Heath.

Pêcheur d'Islande—Loti
Heath; Holt.

Un Verre d'Eau—Scribe
Heath.

Mlle. de la Seiglière—Sandeau (the play) Heath
(the novel) Oxford Clarendon Press.

Mon Oncle et mon Curé—La Brete
Heath.

Graziella—Lamartine
Heath.

Jeanne d'Arc—Lamartine
Heath.

French Lyrics—Canfield
Holt.

Moi—Labiche et Martin
Allyn & Bacon.

Le Roman d'un Jeune Homme Pauvre—Feuillet
Holt (novel and play).

La Mère de la Marquise—About
Ginn (with La-Fille du Chanoine)
Heath (alone).

Les Trois Mousquetaries—Dumas
Heath; American Book Company.

Dosia—Gréville
Heath.

Le Gendre de M. Poirier—Augier and Sandeau
Heath; Holt.

La Bataille de Dames—Scribe et Legouvé
American Book Company; Heath.

Colomba—Mérimeé
Holt; American Book Company; Macmillan; Ginn; Putnam's; Heath; Scott, Foresman.

FOR OUTSIDE READING, THIRD YEAR

(500 to 1000 pages)

Any of the above,

Also:

La Canne de Jonc—DeVigny
Heath.

La Pierre de Touche—Augier
Ginn.

Molière en Récits (with scenes for acting)—Chapuzet and Daniels
Heath.

La Malade Imaginaire—Molière
Ginn.

Cosette—Hugo
Oxford Univ. Press.

Gavroche—Hugo
Oxford Univ. Press.

La Chute—Hugo
Heath.

Le Médecin malgré lui—Molière
Heath.

MATERIAL FOR FOURTH YEAR (Class work—about 500 pages)

LeBourgeois Gentilhomme—Molière
Ginn; Holt; Heath.

Le Monde où l'on s'ennuie—Pailleron
Heath; Ginn.

Eugénie Grandet—Balzac
Holt; Heath.

Les Précieuses Ridicules—Molière
Heath; Holt (with Les Femmes Savantes).

Les Romanesques—Rostand
Ginn.

Le Barbier de Séville—Beaumarchais
Ginn; Appleton; Scott, Foresman; Heath; Oxf. Univ. Press.

Le Jeu de l'Amour et du Hasard—Marivaux
Heath; Macmillan.

Polyeucte—Corneille
Ginn; Heath; Holt.

Athalie—Racine
Heath; Holt; Macmillan.

Gil Blas—Le Sage
Holt; Heath.

Les Oberlé—Bazin
Heath; Holt.

Lettres de Madame de Sévigné, edited by Baker
Longsman, Green & Co.

L'Avare—Molière
Heath; Macmillan; Ginn; Scott, Foresman (with Le Misanthrope).

Le Blé qui Lève—Bazin
Holt.

Cyrano de Bergerac—Rostand
Holt; Oxf. Univ. Press.

French Lyrics, edited by Canfield
Holt.

Hernani—Hugo
Amer. Book Co.

French Short Stories—Buffum
Holt.

Le Livre de mon Ami—France
Holt.

FOR OUTSIDE READING, FOURTH YEAR

(About 1000-1500 pages)

Any of the above.

Also:

Le Crime de Sylvestre Bonnard—France
Holt; Heath.

Le Curé de Tours—Balzac
Heath; Holt.

Jettatura—Gautier
Heath.

Le Siège de Paris—Sarcey
Heath.
Ramuntcho—Loti
Heath.
La Cagnotte—Labiche et Delacour
Heath.
Les Travailleurs de la Mer—Hugo
Heath.
Cinq Mars—De Vigny
Heath.
Nos Enfants—France
Notre Dame de Paris—Hugo
Ginn.
Les Misérables—Hugo
Holt.
Ruy Blas—Hugo
Holt.
Filles et Garcons—France

It should be noted that choice for fourth year may also be made from the list for third year. It is practically impossible to guage the difficulty of reading as between the third and fourth year.

This report was discussed by Professor McKenzie. A rising vote showed that the majority of teachers favored the exercise material now provided in elementary reading texts.

The last number on the program was an address by M. Barthélemy, Consul for France in Chicago. The Consul spoke of his native country. He urged that scepticism and immorality should not be emphasized in discussion of a country that has produced a Joan of Arc, and developed the *foyer*. He mentioned clearness as the great French characteristic, and he said that the French people are progressive, even if devoted to the cultivation of the inner life, rather than to the harnessing of nature. In conclusion he urged teachers to make the French language a key to the French spirit. He asked them not to hide the faults of the French, but to linger lovingly on their virtues.

John Van Horne, *Secretary*.

14. MUSIC SECTION

The Music Section was called to order at 9 A. M. by the Chairman, Miss Mary D. Phillips of the University. After the announcements the Chairman spoke of the importance of the business meeting to follow. This annual business meeting was to elect a chairman, a secretary and two members of the Conference Committee. The Chairman stressed the necessity of making this Committee a working organization and the factors that should count in choice of members for the Committee. Much time was spent in this business organization. Mrs. Homer E. Cotton made the motion and it was carried, to instruct the Chairman to take up the matter with the Chairman of the Conference of having an extra session at the next Conference for problems for grade supervisors. This would make a two-day Conference for the Music Supervisors.

Following this discussion Mrs. Homer E. Cotton was introduced and presided at the morning session.

The first speaker was Mr. G. H. Wilkinson of the Lyons Township High School, who gave **"Report of the Committee on Band Work in the High Schools of Illinois"**. The report follows:

A Report of the Committee on Band Work in the High Schools of Illinois

By G. H. Wilkinson, Chairman

An attempt was made several times last winter to secure a list of schools that supported high school bands, but all attempts to secure such a list failed. At that time the purpose was to get in touch with each school and to offer help wherever requested. Failing to secure such a list of schools, the subject was dropped until a few weeks ago, when I was asked to give a report.

A questionnaire was sent to fifty of the larger high schools from which forty-one answers were received. The questions asked were as follows:

1. What is the number of members?
2. Does the band have a uniform?
3. How is the band supported?
4. Does the instructor give lessons on band instruments without cost to the student? If not, what is the charge?

Twelve high schools reported that they have no bands. They are as follows: Alton, Elgin, Kankakee, Moline, Mount Vernon, Murphysboro, Peoria, Pontiac, Rock Island, Springfield, Streator, and Taylorville.

Twenty-nine high schools reported having a band and answered the questions according to the following summary:

High School	No. in Band	Uniforms	How Supported	By Whom Taught	Private Lessons
Aurora (East)	60	Yes	Board	Music teacher	Free
Aurora (West)	30	Yes	Parent-Teachers Assoc. —concerts	Music teacher	Free
Bloom Tp.	38	No	Board	Outside musician	25c lesson
Chicago Hts.					
Bloomington	60	Yes	Board and Rotary Club	Music teacher	Free
Canton	65	Yes	Popular subscription	Academic teacher	Free
Centralia	12	No	Music by Board	Music teacher	Free
Tp.			Instruments by pupils		
Champaign	31	No	Self-supporting	Academic teacher	Free
Danville	41	Yes	Annual concerts	Music teacher	$1.00 lesson
Decatur	27	No	School activities and athletic fund	Music teacher	Charge
Deerfield-Shields	52	Yes	Board	Music teacher	$1.00 lesson
DeKalb	20	No	Glee Club operettas and school activities	Music teacher	Free
East St. Louis	35	No	School activities	Music teacher	Free
Evanston	18	No	School activities	Music teacher	Free
Freeport	45	Yes	Music by Board —by concerts	Outside musician	50c lesson
Galesburg	55	Yes	Music by Board—Uniforms by Cham. of Com.	Academic teacher	Free
Jacksonville	42	No	Concerts	Academic teacher	Charge
Jay Sterling					
Morton-Cicero	36	Yes	Board	Music teacher	Free
Joliet	82	Yes	School activities	Academic teacher	Charge
Lyons Tp.			Athletic Association	Music teacher	Charge
La Grange	40	Yes	and engagements		
LaSalle-			Board and school	Music teacher	$1.00 lesson
Peru	..	No	activities		
Maine Tp.	50	No	Board	Academic teacher	Free
Monmouth	43	Yes	Business firms	Music teacher	Free
New Trier Tp.					
Kenilworth	90	No	Board	Music teacher	Charge
Oak Park-					
River Forest	30	No	No expenses yet	Music teacher	Charge
Proviso Tp.					
Maywood	34	Yes	School activities	Music teacher	Free
Quincy	45	Yes	Music by board— by concerts, etc.		Free
Rockford	50	Yes	Concerts, etc.	Academic teacher	Free
Thornton Tp.			Board and by school	Outside musician	$1.25 lesson
Harvey	50	Yes	activities		
Waukegan	20	No	School activities	Music teacher	Free

The average membership in high school bands in Illinois is forty-two. A first-class High School Band in our opinion should number about fifty. The following instrumentation is suggested:

Director
12 clarinets
12 cornets
4 altos
4 saxophones
4 trombones
2 baritones
4 tubas
3 drums
2 piccolos

To this should be added an oboe and bassoon. Of course this can be changed to best suit the needs and equipment of the organization. For example, a saxophone sextette instead of a quartet is very desirable. For this purpose the following arrangement may be used: two soprano saxophones, two altos, one tenor, and one baritone.

Sixteen of the twenty-nine high schools have uniforms. The following suggestions may be pertinent. To begin with, a cap and white duck trousers may be used, and when the organization is able financially, coats may be added. It seems advisable that these coats and caps should be according to the regulation blue uniform. Later, blue trousers will complete the suit. Several bands have uniforms consisting of caps and white duck trousers; others have uniforms of different colors, such as red, maroon, or khaki. It does not seem, however, that this is so satisfactory as the regulation blue uniform, because on certain occasions members of the high school band will want to play with other organizations and also it may be necessary to fill out the instrumentation of the high school band by getting help from outside. For example, the La Grange High School Band has regulation blue uniforms. The Masonic Orphans Home Band located in La Grange, also has blue uniforms, and five or six of its members belong to the high school band. At the football games, these two bands unite without a clash of uniforms. Even such a prominent band as John Philip Sousa's uses the regulation blue uniform.

The general custom in regard to financing the high school band seems to be for the Board of Education to buy music and also the larger instruments, such as tubas, trombones, drums, and baritones, leaving the smaller instruments such as cornets, clarinets, and saxophones to be purchased by the individual players. In some schools the entire expense is borne by the Board of Education who buy the music, uniforms, and instruments. On the other hand, some bands receive no support whatever from the Board of Education and secure their suits, instruments, and music either by public subscription and support from the commercial clubs or from the school activities, such as glee club concerts, band concerts, and athletic associations. A middle course seems to be advisable. It seems best for the school to own the larger instruments, and for the Board of pay for the music and perhaps the uniforms.

The direction and control of these high school bands is divided among music teachers retained as a part of the high school faculty, teachers of academic subjects who are interested in directing musical activities, or outside musicians hired for this particular purpose. The success of any of these plans depends upon the instructor, although in any case it seems best to have the instructor a regular member of the faculty and responsible to the high school administration. In filling out the questionnaire one school reported as follows: "We have no band now. We had one last year; it was supported by the Board of Education; we had uniforms, and we depended upon an outside director. He failed in instruction, discipline, and morale. Only a director in the school can make it go." This reply would seem to indicate that the director should be a faculty member. The instructor should be able to teach at least four of the instruments, among which may be mentioned the cornet, clarinet, trombone and drums.

Whenever possible, it seems best that the private lessons should be without charge to the student. This can be done by allowing certain sections of the band to get together for rehearsal at vacant periods under the direction of a full-time teacher. Only a few Boards of Education have been generous enough to make such arrangements, but there is no question about its value to the organization.

In conclusion, I wish to state again as in my paper of last year, my belief in the value of instruction in band instruments to high school students. It meets the objectives established by the high school committee, namely, Health, Wealth, Association, and Beauty. It teaches concentration for it requires as much mental effort to read music as to translate a foreign language; it requires as much manual skill in getting control of the fingers to manipulate the instrument as it does to complete courses in the Manual Training; it contributes very much more to the wholesome pleasure of life after school days are over than any other subject in the high school curriculum. I hope that every Board of Education in the State of Illinois will plan to encourage the organization of a Band in its High School.

A discussion followed in which all agreed that this activity was worth all it cost. The work creates loyalty and enthusiasm and affords an outlet for some of the unbounded energy.

Mrs. Cotton told of their experience in organizing a band. She also gave an account of the Music Memory Contest held in Chicago last year.

Afternoon Session

The meeting opened with an opportunity for a final vote for members of the Committee. The result of the voting was as follows:

For Chairman—Miss Mary D. Phillips, University.
Secretary—Miss Lucile Ross, Bloomington; 1924, Mr. E. B. Brockett, Joliet; 1923, Miss Ellen Sargent, Anna.

The Chairman introduced Dr. Cornelius Krusé of the College of Education, who gave the following address on the **"Project Method".**

In the last ten years the so-called "Project Method" of teaching has received a great deal of animated discussion on the part of the educational world. The history of the term shows an ever increasing extension of its meaning. Agricultural vocational education was the first branch of the school to avail itself of a name which had been made familiar to progressive-minded farmers by the cooperative enterprises directed by the Agricultural Experimental Stations maintained by the United States Department of Agriculture. The term seems to have been first used in Massachusetts in 1908. It was not long before the word was used in many states to designate types of work such as are now carried on under the sanction of the Smith-Hughes law. Some years later teachers saw the applicability of the spirit, if not of the letter, of the project as then conceived, and in the last five years attempts have been made to adopt the project in all fields of instruction without exception.

Today there are many conflicting views with regard to the interpretation of the project. The history of the development of its application is no doubt a sufficient explanation for this disagreement. With many the concept is essentially a bearer of the same meaning it represented in the early days of its adoption in agricultural and industrial education. It is little wonder that for Snedden, among the foremost in vocational education, the project means some "concrete and positive achievement." This conception is illustrated by the examples of the project presented in his discussion: "the baking of a loaf of bread, the making of a shirt-waist, the installation of an electric-bell." Ruediger seems to adhere even more strictly to the early interpretation by insisting that a saleable product must be the criterion of the project and he doubtless thinks of the profits that boys may realize in the raising of pigs and chickens and in the cultivation of vacant lots. If this were the only possible meaning of the project its range of application would be discouragingly limited.

But there are equally staunch defenders of a wider interpretation of the method. In Mr. Stevenson's proposal to consider the natural setting of the enterprise as the chief condition for the realization of the project we have a half-way station to the widest possible view held by such prominent men in Teacher's College Columbia as Kilpatrick, Bonser, and Hosic. If the project is to prove interesting and helpful to teachers of music its wider meaning must be accepted. It is useless to argue that such an extension of meaning is un-

warranted, for the very defenders of the narrower view enlarged the term as originally used by the agricultural experimental stations.

But especially is there justification for the retention of the term if the spirit of the method is preserved even when applied to fields of school activity which seemed at first to offer no opportunity for its usefulness. What then is the heart of the project method? There is full agreement in this one particular that the project has at its core child-purposing, and child-activity whole-heartedly pursued. The school unfortunately has not infrequently been surcharged with the atmosphere of artificiality. Tasks for which the child could see no value were imposed by the teacher. Little wonder that children worked listlessly and without enthusiasm. Little wonder, too, that conscientious teachers have viewed with envy the expense of energy willingly made by children in their games and in their occupations outside of the school. To bring life back to the school is the central purpose and dominating philosophy underlying the project.

The question has sometimes been asked whether the project is not a new name for an old educational method. If child-purposing and child-activity are the central factors in this method one cannot help thinking of great leaders in education who in the past have taken the child and placed it in the midst of all educational thought. Rousseau, Pestalozzi, Herbart, and Froebel may in a sense be considered forerunners of the idea which in our time has again been brought so forcibly to our minds by John Dewey. Not subject-matter but the child is central in all true education—not so much preparation for life but life itself should be the end of education, these ideas familiar to all readers of Dewey are incarnated in the project. In the project child-purposing means that the child itself feels the value of what it is doing, and therefore needs no prodding from the outside. If the project is really successful it accomplishes in the school what William Morris tried so hard to restore to industrial work; it makes the activity pleasureable in the doing. All of this does not mean that the teacher abdicates and turns the children loose to do what they please. But the project spirit makes teachers leaders rather than autocrats, leaders who do not impose tasks but rather use and stimulate wholehearted child interests so that they may yield fruit educationally.

The question of immediate interest to teachers of music in this connection must be the practicability of the project in their teaching enterprise. By answering the following question you can determine for yourself whether or not you can personally use the suggestions of the project method as used today in so many school activities: Are there opportunities in music for zestful, enthusiastic self-activity which is dominated by a purpose wholeheartedly a part of the children? There can be but one answer inasmuch as music is expression, and by no means an expression of thought and feeling reserved for adults. Even now there must come to your mind the opportunities for the organization of school-orchestras and bands, the learning and singing of songs so varied in character as folk-songs, rounds, carols, ballads, nature songs, songs of greeting and farewell. Some children may even be sufficiently gifted to be able to write simple melodies for which others may write the words.

There is one aspect of the teaching of music which at first blush would seem to lend itself less easily to project work, namely the aspect of appreciation, because it seems to be characterized by passivity rather than activity. And yet, true appreciation is never passive, Bonser goes so far as to say that there is "creative listening". We get from music what we bring to it.

There are naturally dangers and difficulties attached to this method, but also great opportunities. Teachers of music, thoroughly acquainted with the requirements of the spirit of this method, should be eminently successful in stimulating child-purposing and child-activity in a field where children and adults have so much spontaneous interest and desire for expression.

In the discussion that followed the Chairman emphasized the three different types of projects as given in Bonser's "Elementary School Curriculum". Under the first we have the method of selecting and arranging, or where the child leads. However the teacher should never be absent from a thing. As an example "Wild Rider" by Robert Schuman. It can be played by the teacher.

Under the second method where the teacher leads: objectives in music—First hear the music, get the appreciation of the form, phrase, sentence. Teacher throws out the hints. As an example: for phrase sentence of section "Serenade" by Saint-Saens or "Unfinished Symphony", Schubert, for recurrence of themes, variation and structure. The third method: the children lead but the teacher is in control to the extent that both the first and the second are involved. The teacher takes the natural expression of the children and directs it to what is to be done. As an example of the third method the Hansel and Gretel Suite.

This discussion was working out the Project idea in Music Appreciation. The following questions were given out and the members of the Section were asked to think about them.

1. Who will make your curriculum in Appreciation?
2. Who shall teach Appreciation, the grade teacher or music teacher?
3. What kind of song material shall young children hear in the Appreciative period?
4. The Appreciation of tonal quality of instruments, how present this, and when?
5. Vocal records as arias, quartets, duets,—how much of this as Appreciation?
6. How much shall we say about composers, artists?
7. How much opera and oratorio will you teach? How much Symphony?
8. What is a correlation? How use it? What is the difference between a correlation and an association?

Are these examples of correlation?

1. Spring Song by Mendelssohn. Dance of the Nymphs (Corot).
2. The Two Grenadiers (Schumann) and some incident of the French Revolution.
3. When Daisies Pied (Shakespeare-Arne) and the reading of Shakespeare.
4. Who is Sylvia (Shakespeare-Schubert) and the reading of Shakespeare.
5. Ave Marie (Schubert-Scott) and the reading of the Lady of the Lake.
6. Egyptian Ballet Music (Luigine) and the study of Egypt in Geography and History.

7. Danse Macabre (Saint-Saens) Cazalis poem Dance of Death.
8. Ballad of "John Anderson, My Jo" set to music and the reading of ballads.

Following this a paper, **"Music a Factor in Moral Education"**, was presented by Mr. L. L. Carl of Belleville.

A celebrated criminologist of New York, who investigates neurotic cases among the child criminals, when asked about the possibility of preventing or diminishing crime answered: "Unless the nation becomes permeated with love of music and some understanding of it, emotional instability will increase."

When I read this statement it sounded to me like a challenge to those, into whose hands is given the shaping of the character of the young. So it is our task, we are made responsible for the salvation of the soul of the individual and the happiness of a nation. But are we prepared to fulfill this task? Has each one of us a definite plan in readiness by which to improve the deplorable condition mentioned above? It is by the individual preparedness and the concerted effort of the music educators that results can be brought forth. One hears so much comment upon the many ways and new methods of teaching music, upon the various opportunities offered to the people to hear music and to absorb the productions of art. Yes, maybe there is a greater variety of methods, maybe there is an inexhaustible supply of musical performances, but is the system within the various methods correct? Is there any profitable discrimination in selecting compositions for public absorption? We must base all musical education upon a productive principle. We must consider the psychological importance of the subject. We must keep in view that music, like all branches of art must serve as a medium of stimulation, that it must be the stimulus to our inner life. Our inner life expresses itself in emotions. Music must stabilize emotions.

We know that Plato considered music the basis of all education. If a great educational system as that of Plato was based on that subject, we ought to be convinced, that the reason for his decision was well founded. It was placed upon psychological truth. Plato gave consideration not only to the artistic value of music but he also provided for the attainment of an emotional balance, which can be reached by the creation of a rational outlet of emotion. Emotion is a highly complex mental process, including all such experiences as joy, sorrow, hope, fear, anger and disgust, love and hatred. These sensations must have a normal stimulus to its expression. The stimulus is provided in art. The object of all art is to refine emotion. Without this refining influence, emotion becomes hysteria, which is an irrational expression of emotion, but still an expression. If we, however, entirely suppress the opportunities for an emotional outlet the result will be still more dangerous, even disastrous, because pent-up emotion will destroy itself and everything else. Emotion developed into enthusiasm will, under the controlling influence of music express itself by means of inspiring songs or find response in the powerful strains of a band or orchestra or organ. Under those circumstances music makes emotion safe, providing it with a rational outlet, keeping it within certain limits, preventing emotion from turning into violence. Crowd enthusiasm, when expressed in music is wonderful, but the same emotion uncontrolled by art often turns into mob violence and then it is fearful.

We find the same conditions in religion. Religion awakens emotion, which will reach the height of enthusiasm. As such it is elevating, when it resounds in inspiring hymns, but without music this same enthusiasm may degenerate into fanaticism. For the truth of these statements we have many proofs in history and in our own personal experiences. To avoid the irrational outlet of emotion we must therefore find the remedy in creating the means of permeating the nation

with love of music and some understanding of it. This is the task of the music educator. He must show the way how to create stability of emotion. If emotion is stabilized, happiness will be the result. Without happiness one cannot be efficient.

Efficiency, however, is the strength of a nation. Do we realize how far-reaching our work is; have we made clear to everybody, how important a thorough education in music is to the individual and the nation? On the hand of the development of the nations and the history of music we can prove it, how the standard of music of a people reflects its cultural position. From time unknown the human heart has been yearning for music, forced by the unconscious desire for a normal expression of the inner life. If we follow the development of music we will be able to observe the growing of civilization. During the prechristian area the nations, which had reached a high standard in civilization possessed also a highly developed musical system. Let us recall the reports of the efficiency of the Egyptians, Phoenicians, Hebrews and the Greeks. And later after Christ the wonderful progress of civilization. At first there was the period of primitive attempts. The simple life of the people of that period is reflected in the simple chants of the church. But soon after some centuries the human heart freed itself from the shackles of the doctrine and emotion of love for corporeal beauty, expressed itself in the folksong. It replaced the solemn church song and graceful melodies made the heart happy. From then on everything took on more graceful lines. Civilization grew steadily supported by the Netherlands, and the Venetian people. The increasing conception forced the improvement of technic. This caused great discoveries in the commercial world; in music it perfected instruments of all kinds for the expression of more refined feelings until we finally arrive at the culmination point of modern life.

We cannot go into detail and analize the standard of culture, of the different nations according to their musical productions, but it should be an easy matter for anybody to find a conclusion in that respect for himself. It is certain that we have now entered distinctively the age of music and the age of science. In order to further both the two must keep in close connection. R. Hebert Newton says: "Music is the art of the age of knowledge, music is an emotional symbolism, suggesting that which, as feeling, lies beyond all words and thoughts. Where words end there music begins. Music can never end to be emotional because thought, in proportion as it is deep and earnest, always trembles into feelings. The most holy place in the universe is the soul of man. All sciences lead us up to the threshold of this inner creation, this unseen universe, throw the door ajar and point us within. All arts pass through the open door into the vestibule of this inner temple. Music takes us by the hand, boldly leads us within and closes the door behind us." Music is indeed a mysterious phenomenon. Often if the most hardened soul cannot be touched by the written word or the spoken message, it will melt at the tunes of the singer or the effective combination of instruments, and then music is acting as a stabilizer of emotion.

The material produced to offer a normal outlet for emotion is so great at the present time that the masses will be able to find response to any of their feelings. But the opportunity must be open to all classes, rich and poor alike. It is true one might find enjoyment and consolation in music without a thorough training. But to the mere gratification of senses ought to be added the intellectual satisfaction of an understanding of the purposes of the composer. Then music truly becomes a source of exquisite delight and will transport one's whole consciousness with noble and exalted emotions.

If we want to work for a betterment of conditions, if we want to open the gates of the realm of thorough understanding, we must create a nation of good listeners and discriminating performers. The place to accomplish that is in the public school. There we can reach everybody and at an age, when the soul responds so easily to impressions and influences. It is there, where we

shape the destiny of a nation. It is given into our hands, whether we shall have a moral or an immoral people because music is able to render it both. Just like a good book will elevate the human mind so good music will elevate the moral standard of the individual. But music of low type will sow the seed of immorality.

It is our sacred duty to stamp out the temptation. The only way to accomplish this, however, is to refine the taste. I shall not map out any definite plan for that work, but I desire to say, that whatever we may decide upon as being the most promising way for reaching the goal, we must try to carry it out uniformly.

There is one thing lacking in the teaching of music in our public school today, and that is, that too many methods are being used, and often methods without any real objective. It should be our task for the future to work out a project based upon a refining principal, and if approved by the authorities, to see to it that it is carried out in every school of the state. If we understand the importance of music as a subject of moral education, if we can open the eyes of those who can support our plans, to realize what music means, as a medium for the uplift of the character of the nation, I am convinced that we shall be successful in fulfilling the purpose of music. Let us sound the alarm. Let the world know that a way has been found to make the country safe against crime that we can create happiness and that way increase the efficiency of our people. But we must be prepared, that when we draw the curtain aside, the scene is set, and that we can show plainly the means by which we can accomplish our claim. Let us be serious about this, just as serious as the matter is itself. We must not feel satisfied, to have read a paper, to have listened to it attentively, to have taken part in a discussion, we must gather to attain a result, if the problem is really important. If we study over this subject we will realize its importance and, to me it seems essential to force an issue. We must work for definite and uniform plans acceptable and suitable to all conditions. If music should accomplish what men of science, economics, sociology, expect of it, we must not evade any expense or discomfort, invidually or universally, for the sake of the final results. If we music educators have the good will, we shall be able by means of permeating the nation with love of music and understanding of it, to make the country safe for happiness, efficiency and morality.

Following this discussion the Chairman spoke of the recent tests in Music Appreciation by S. A. Courtis of Detroit that have been published and are now being tried.

The Conference then adjcurned to the Y. W. C. A. Auditorium to hear Miss Nina B. Lamkin, Dramatic Organizer for Community Service (Inc.), N. Y.

Miss Lamkin told of her work in the recent Pageants directed by her, also of the Institutes held for developing community activities. She brought out the great part played by Music in Festivals and Pageants, the relation of the Supervisor to the Community and the work with children, emphasizing the fact that the talented children were not the only ones to be used.

Following her address she gave a demonstration with children from the third grade of the Urbana schools. First the interpretation of certain rhythms, followed by dramatization of song stories.

The talk and demonstration of Miss Lamkin was considered by many Supervisors to be the most helpful that the Music Section has ever had. The exhibit in the upper hall of Music Building attracted many people. This showed how costumes and accessories for Festivals can be made with very little expense.

15. PHYSICAL EDUCATION SECTION

The Physical Education section which met at the University High School opened with a paper by Mr. Stanley Joseph, Director of Athletics in Cicero High School. Mr. Joseph discussed boys' work in relation to Physical Education aims in the high school. This was followed by a discussion of girls' work by Miss Rose Gyles of the Cicero High School.

Mr. Harry Thrasher gave a paper pointing out the Physical Education needs in Illinois. Some striking statistics were presented on the increase in enrollment in the schools of the state. In the discussion which followed the need of state legislation was emphasized in response to this. Mr. Whitten read a bill for an act. This was in the form of an amendment to the act to provide Physical Education in the public schools and all the normal schools, approved June 26, 1915. This bill was signed by Mr. C. W. Whitten, President Felmly, and Supt. L. A. Smith.

It was moved and seconded that the members of the Physical Education section heartily endorse this act of the committee and do all in their power to further its passage. It was suggested that this proposed bill be brought before every Parent-Teacher Association. Moved and seconded that a committee of three be appointed to supervise the advertising of this bill.

The afternoon session opened with a talk by Miss Leah Gregg of the University of Illinois on "Correctives, Their Place in a High School Curriculum." A display of posters gave added significance to Miss Gregg's discussion of posture.

Miss Edith Bond, Director of Physical Education at the Northern State Teachers College, DeKalb, read a paper on "Dancing as an Educational Activity."

At the regular business meeting held at the close of the program it was moved and seconded that officers be retained for three years.

It was moved and seconded that the present officers be retained and a member at large be elected this year.

It was moved and seconded that a unanimous ballot be cast by the secretary for Mr. J. T. Meade, of Taylorville High School, for member at large.

Adjourned.

LOUISE FREER, *Secretary.*

The Aims of Physical Education

Stanley E. Joseph

The discussion in this paper will be confined almost entirely to the boy in High School. It might be well to define the chief aim of Physical Education as "that direction of motor activity which develops the mind, forms character and directs the physical activity of the body; its structure, its functions and its powers."

Physical activity itself, apparently has two aims. One may be classed as recreative, educative and tending toward the development of the individual; while the other, seeks for entertainment and the applause from spectators. I see no reason why a just balance of the two aims cannot be had in the program of any school. Let us have our interscholastic competitive athletics on a well managed basis so long as it does not push aside, or engulf the rights of the individuals who cannot play on a representative squad or school team. On the other hand, we ought to have a large and varied program of intra-mural and mass games so that every pupil may have a chance to participate.

At the time in which we deal with the boy, we find him in a critical place in his life, and we should use every agency in our power to present to him the best of the physical education objectives. At this time, the physical and mental change will determine in ninety nine cases out of one hundred, the character of the individual throughout his adult life. The boy problem as we speak of it, is a problem of developing a personality, and to the Physical Director and the home is left the responsibility of this development. If the home fails, then the Physical Director may be the deciding factor in the boy's training. In other words, the Director should be the pattern for wholesome habits which the boys are to copy after, and he should so conduct himself that these virtues will be presented to the boy before he has acquired his moral independence. This moral independence comes at the time when he assumes to stand on his own two feet and make the decision which will determine his future conduct. The first duty of the school is to teach the boys to perform better, those desirable activities that they are likely to be engaged in any way. With this in mind, we have then two objects to attain: One, the organization of recreational activities, and the other, the direction of recreational activities. To successfully carry out the proposed schemes, the first thing is to secure an able and sincere group of leaders to work for definite aims, and with this thought in mind, leaders should be chosen from the different classes, and at the weekly meetings, these leaders should learn through the Director how to conduct the physical work and the intra-mural activities. This provides an opportunity for developing initiative, co-operation, responsibility and obediance. The second object to attain falls upon the Director, in that he must teach the boys to play better those games which they already know and to apply true sportsmanship which will form more desirable physical, social, moral and mental habits. This is not hard to do as most boys of high school age are ambitious to be strong, clean and vigorous and are eager for information which will explain how they may get their bodies in the best physical condition, and how they may keep fit. The aims of the Physical Director and the boy are different. The Physical Director seeks to obtain physical, social and moral efficiency, while on the other hand, the boy seeks to obtain fun and more fun. To get the leaders to realize that they must inject the right punch into whatever work they have on hand, is at first a real problem for the Director, but soon the responsibility will begin to be felt by the leaders and they will commence to seek out the Director for aid and will give some very good suggestions regarding the work; and in a short time the responsibility will be assumed by these leaders. We now see that these boys have acquired initiative which is a very desirable trait. From the boy's standpoint, he may take kindly to this plan, if through the leader and the Director he is learning to become more skillful in those games which appeal

to him, or if he is learning new ones. If there has developed co-operation between him and the leader, he is then made to feel that he is an integral part of a movement that is accomplishing results for himself and others.

Altho I have stated the aims of Physical Education, we find that the values are fourfold; corrective, hygienic, recreative and educative. The chief aim and ultimate end of our program in our school is for the promotion of health and the development of the boy and we have so arranged the work as to bring out all of the chief objectives of Physical Education. Our purpose and plan is to guide the boy through the period of adolescence with the best possible physical health. This is done by thorough physical examination, by prescribed corrective treatments taken from the findings of the medical examination, and by notifying the parents of any defects which should be handled by a regular physician, and to give as thorough a course as possible in personal hygiene. We aim by periodical physical examinations, and physical efficiency tests to find out the boys' condition, his skill and ability to perform.

In order to accomplish the work in our department, we have arranged a gymnastic record with events which are compulsory for all. We base our marking, and note our progress by semesters in the various activities. It might be well to explain this record sheet which covers the boy's record for all activities for a full four year course. It contains all the information necessary to show what the boy has done in all phases of the work covered by the department. I will give a brief description of the record. It contains a general summary consisting of name, address and other desired information. Following this, is a list of athletic activities denoting the number of points awarded for playing on the squads during the entire season, in intra-mural, inter-class, reserve team, light-weight and heavy-weight games. The class work consisting of marching, calisthenics, demerits, attendance is graded. On gymnastic apparatus, points are given for the correct execution of one prescribed exercise on each piece of apparatus. On the reverse side of the record a place is left for the statement of the physical defects of the boy which are to be corrected, and the family physician's name and address. The measurement chart shows the age, height, over weight and under weight as well as what the boy should weigh. These measurements are taken in September, February and June of each year. Also a posture test consisting of inspection of head, chest, abdomen, back and feet taken at the same time. The athletic tests are divided into three groups; events in the gymnasium, events on the athletic field and events in the swimming pool. Points are awarded for results in the prescribed events. The weight classification of a boy is as follows. 80# class—95# class—110# class—125# class, and unlimited class. Thus one boy may have a high score in the class which he represents, giving all a fair and equal chance to compete.

The merits of the above records are many. A survey of the boy's growth and what he has accomplished in athletics and acquatics may be seen at a glance. This record will do much to urge other boys to compete for a better record next year. The number of points compiled in four years should be indicative of the students merit in athletics and skill in gymnastics and swimming. Medals or sweaters with numerals might be given as an inducement for keener competition.

As a summary, I don't know as we should worry a great deal about what the boy thinks of our program. The majority of boys at high school age as a general rule are receptive to anything which is good for them so long as the program is made attractive and tends towards the highest ideals of scholarship, hygienic living, gentlemanly conduct, friendship, clean sportsmanship and use of common sense. As physical educators, it is our privilege to be at the front of this worthy effort for human betterment.

Objectives in Physical Education for Girls at Morton High School

Rose M. Gyles

However much we, who count ourselves privileged to work in the field of physical education may vary in our methods of attaining our aims, it is, nevertheless true that we all have the same ideal, the attainment of the highest mental, moral, and physical development of the pupil, that he may be made fit to do effectively the things that make up his life and that establish his relations with the lives of others.

While our fundamental objective is the same, however, the methods of attaining it and of achieving the intermediate objectives that so materially aid in accomplishing the final result may offer variations of procedure which may have in them something of interest and of value. Methods of work depending upon school conditions, equipment, cooperation of school boards, of principals and faculties, of parents and children, and their appreciation of and response to the efforts for advancement toward objectives, mark the differences which distinguish the standards of physical education in one school from its standards in another; and in this case may make an exposition of our more immediate aims and the efforts to achieve them of some interest to you.

With this comforting hope, I venture to tell you what may seem like personal history in telling what we are doing and what we are trying to do at Morton High School.

When, fifteen years ago, it was my happy privilege to install the first gymnasium at J. Sterling Morton High School, I had no idea that I would meet in my new principal a man much in advance of his time in his appreciation of the value of physical training and especially of physical training in schools. I found such appreciation and such ready cooperation in carrying out new ideas, ideas that seemed advanced or extreme, but in a little while proved to be practical and often even necessary, that it has been a pleasure to work with him during all these years.

I often wonder how many teachers of physical training in American schools have in their minds the ideal of a daily period of physical training in the gymnasium or out of doors, every day of the school year for every physically able child in the school? We know, of course, that in a number of European countries, this ideal is a practical fact. At that time the Chicago schools, because of crowded conditions, or lack of equipment, offered class work in physical training only twice a week. Although most of the physical training teachers, as well as the Superintendents, were German or Swedes (those countries noted for progressive physical training), the European practice of daily gymnastic work was not carried on in Chicago. My actvities had been largely devoted to settlement work. At Hull-House, the desire for recreation or for improvement in health and strength could draw classes at most to attend only twice a week. I went to Morton with the hope that I might be allowed to teach my pupils three times a week. What was my surprise and delight to find my principal in favor of daily work in the gymnasium for every student in the school, and to find that physical training was to be a regular course in the curriculum ranking in importance next to English as a requirement. From that time until today, no matter how crowded our conditions or how full the day's program may be, every boy and girl, physically able, reports for physical training every day, five days a week, during all the four years of his course. With such an ideal attained, we aim to continue the practice, knowing so well the beneficial results of that daily hour of physical activity and recreation.

I taught for a short time in a school where children were not required to wear special clothes for the gymnasium. That experience made me realize the necessity and advantage of a proper uniform for gymnastic classes. At Morton, no girl is allowed in class unless she meets the clothing requirements. Every girl is put on her honor not to wear corsets or tight bands, and we seldom

have to penalize on that account. Girls always find it a nuisance to dress for "gym", but Morton girls have learned to take it as routine and are pretty cheerful about it. One of our aims not yet realized is to make the wearing of bloomers and middies so popular, that they will be worn throughout the day as a school uniform. Think of the saving of time and money which the wearing of that sort of costume by the girls would mean to the mothers! Think of the democracy of such a uniform method of dress! No longer would any girl be self-conscious about her clothes, be envious of another girl's pretty dresses, or have to emulate, with insufficient means the styles adopted by her more prosperous companions. And think of the saving of time for the period of physical training! The period with us is but forty-five minutes. With ten minutes taken at the beginning and at the end of the hour for change of clothing, twenty-five minutes only are left for actual work. If we could only add the twenty minutes to the time of work, how much more each child would gain in health, strength and power.

Which brings me to another objective not yet realized, which may be made possible by a longer period for physical training. Forty-five minutes, with time out for dressing and with classes ranging in number from thirty to sixty, is much too short a time for any earnest or zealous director, who wishes to give her ideal of a good lesson in physical training. A sixty minute hour might be long enough to make the use of the shower bath after exercise possible. It would be interesting to know in what proportion of high schools the use of showers after exercise is practical. Our time is much too short. To be sure, the girls use showers before and after swimming, but it cuts the swimming lesson down to twenty minutes. Could time be allowed for the shower after exercise, what a great benefit it would be!

We are especially fortunate at Morton in having a very good equipment for Physical Training. There are two gymnasiums and a swimming pool, 60x20 feet, shared by boys and girls on alternating days. A field, a city block, 600x300 feet in size, provides space for foot ball, hockey, indoor and outdoor baseball and tennis. A cinder running track of one-fourth of a mile encircles the field and gives opportunity to the girls as well as to the boys for track and field work.

With such an equipment, it is easy to give great variety in our work. There is no danger of class work becoming monotonous or wearisome. Each class has at least one swimming period a week and sometimes two. Each class has a dancing hour per week, in which folk, social and aesthetic dancing is taught. Each class has at least one game period out of doors, if the weather permits, and two periods of formal floor work or apparatus.

Four women instructors use the girls' gymnasium, taking care of seventeen classes each day. Seven hundred and seventy-five girls report for physical training every day. On swimming days, one class takes the pool and one takes the gymnasium. On other days, classes alternate in the gymnasium or out of doors, or if the weather is unsuitable, one class is given apparatus work on the side lines or a lecture in hygiene. Once a month, every class has a written spelling lesson of four words on physical education. The words are spelled from memory, marked, defined and used in a sentence. Short talks on hygiene are given in all classes also, as we have no regular classes in hygiene in the school. During the menses period, each girl is required to observe and write out the lesson as it is presented by the instructor to the class on the floor, or writes a theme on some physical training subject or is asked to read some pamphlet on hygiene or study the rules of some game. No girl is excused from work unless she is really ill. There is not much chance for malingering, as each absence and excuse must be made up or a certain percent is taken from the monthly grade. The credits allowed for a semester's regular work are at most two and one half. For optional work taken three times a week we give an extra credit.

Optional work, once a week in dancing, swimming, and games is offered to any pupil who is willing to give the extra time to become more proficient in

those subjects. Since we have a double session day, upper class girls take optional work in the morning before their regular classes begin and Freshmen attend extra classes in the afternoon. It is indeed gratifying to find about seventy-five per cent. of all the girls registering for at least one optional class, some for two and even others for three, not so much for the extra credit given, but because they really love the work.

From the very first, one of our aims has been to require a medical examination of internal organs, as well as a thorough physical examination and measurement of each girl. And at first, the medical examination was made by the pupil's family physician. We soon found doctors giving certificates without examining the children, and often excusing them from physical training for no cause. During a "flu" epidemic, our School Board found it expedient to employ a doctor for daily examination at the school. The following year, the Board granted our request for a medical examination to be conducted at the school at the time that we were to make our physical examinations. This semester we advanced one more step, in that our Board consented to employ several women doctors, among them some who conducted the examinations at the University of Illinois and also at the University of Chicago. As a result, we now have a thoroughly efficient examniation with a report that, while it shows conditions of malnutrition among the first year girls that are rather appalling, gives us a fine basis for remedial, corrective, and "follow-up" work.

While with the help of a progressive school board, we have attained our aim in physical medical examinations, we still have before us the task of the "follow up" that the medical report has laid out for us. To ascertain conditions is easy enough. To get the co-operation of the family to improve the bad conditions, is quite another matter and our "follow up" work has been our weak point. It is not so difficult to awaken the interest of a pupil in her condition, but in the community largely composed of foreigners, ignorance of the importance of medical attention or the question of the expense it involves, makes the co-operation of the parents difficult to obtain. We have an able ally in the person of the Superintendent of the Central Free Dispensary, Rush Medical College, to whom we send cases for treatment free of charge, but it is through the interest of the children that the education of the parents must begin.

The children of the foreign born of peasant stock are thought to inherit a stronger constitution than native Americans or Americans of second and third generations. Which may be true, but bad habits of feeding and unsanitary home conditions do undermine a strong constitution very quickly. The report of the medical examination, showing so large a percentage of malnutrition makes us feel that we must get in closer touch with parents and home conditions and endeavor to teach the value of measured feeding and the dangers of overfatigue.

We have had in practice for three years a system of weighing each pupil at the beginning of each month to ascertain her condition in relation to her norm. As a result of our findings we instituted the "milk squad" last year. Each girl who was found to be 7 per cent. below the normal weight for her age and height was urged to report to the lunch room for crackers and milk about ten o'clock in the morning. While the "milk squad" proved a popular "class", the results were not as satisfactory as we had hoped. We must get the help of parents in instituting measured home feeding and more rest to accomplish better results. With the help of our Board, we now have in view the establishment of a rest room, a sunny, airy room, equipped with cots, where our worst cases of "over-fatigue" and malnutrition may rest during the physical training period. The "milk squad" will continue, but we will add an afternoon session of that "class".

For several years, we had our pupils keep what we called a Bank of Health, a card with fourteen points of the day's order in hygiene and moral behavior inscribed on it, each point of which was to be checked plus or minus

according to daily observance by the pupil, and the card handed to the physical training teacher at the end of the month for a grade. Theoretically, the system is excellent. Practically, it is of benefit only to the conscientious child. Its failure as a truthful record lies in the ease with which the pupil forgets to make her daily record and checks up on the last day of the month putting in a few minus signs so as not to hand in a too perfect card.

However, while it is a failure as a truthful record, the Bank has at least one merit. The fourteen points are carefully noted on each card and furnish a means of instruction in the day's order of hygiene which cannot be entirely ignored. I am not sure that we shall not again institute its use, especially for Freshmen classes.

Our "follow up" in remedial corrective work in scoliosis also falls short of our aims. With the use of one gymnasium only, more than comfortably filled with large groups of active, happy and sometimes noisy girls every hour of the day, individual corrective work is practically out of the question. We aim to classify our corrective cases, grouping them for the same kind of corrective work. We used a curtained off corner of the gymnasium for individual work last year but, with the completion of a new wing, we hope to have a proper room for corrective work, as well as the rest room spoken of.

One of our ideals is to have an out-door gymnasium, a space open to the sky, but well protected from winter winds, so that we may have gymnastics and games out of doors all through the winter.

I cannot close without some mention of our work in posture training. I can remember no specific instruction as to posture received during my training school days. In common with other students of my time, I found myself working out and putting in practice the theory of the correct posture long before Miss Bancroft's book on Posture was published. Our first efforts at Morton with a beginner's class is the instruction and practice of correct posture. Daily from the first day to the last of her activity in the gymnasium, the girl's posture is emphasized. Once a month on swimming days, the standing posture test is taken of each girl in her bathing suit. The instructors are asked to watch posture in marching and class work daily. Once a semester, the Triple Test is given. We do not reach perfection, but our efforts are to approximate perfection, and we are content with our progress, even if it is slow.

We hold at least once a year a demonstration in physical work of all the girls' classes, giving the same demonstration two evenings in succession. We aim to give it as a test of the student, a test of ability to memorize drills and dances, a test of ability to execute satisfactorily, and a test of sportsmanship and school spirit. The demonstration is given also to acquaint parents and friends with the work of the department and to give them an opportunity to actually see the work of the particular child in whom they are interested. Should we fail to give our annual exhibition, one of the greatest incentives for application and progress would be lost, so much does each pupil herself enjoy her part in entertaining the community.

That our girls show great interest in athletics is proved throughout the year by their regular attendance at their own team practice and at all game contests, especially those that take place at Morton. Our aim is to make them good sportsmen, to play the game for the sake of the game and to learn to be good losers, if lose they must. They show their whole-hearted enthusiasm and sportsmanship by joining the Illinois League of High School Girls Athletic Associations on a 100 per cent. basis and working hard for the honors that that League confers upon its members for work achieved.

I feel that I should speak also of our objectives in the social life of the school. While the dean of the school has supervision of all the many social events that take place at Morton, the department of physical education also takes an active interest in those events. Social dancing is taught by the physical directors to all of the classes, and especial demonstration is made of the correct deportment of the dance, the positions assumed by the dancers and the

character of the dancing itself, so that at entertainments given by any group or class, we may be sure that the correct form of the dance and deportment will be observed.

Our last objective and one that we feel can be worked out, is that of a department of physical tests, carried on much as mental tests are carried on, to be given periodically, resulting in a classification of pupils on the basis of physical averages in health, strength, and power. Class divisions are now made on the basis of years, irrespective of physical development or ability. A second year pupil enters a second year class and does second year work, although her physical development and ability put her properly in the fourth year class. With a department of physical test established, what possibilities of grouping pupils according to vital indices and developing them according to their powers lie in the hands of their trained and resourceful teachers!

Our final aim is to make our girls self valiant, well-poised, courageous in their convictions, helpful to others, resourceful and energetic in character as well as strong, and graceful and healthful in body.

Physical Education Needs in Illinois

Harry M. Thrasher

In 1915 the General Assembly passed a law entitled "An Act *to provide for physical training in the public and all the normal schools.* This act reads as follows:

"Section I. *Be it enacted by the People of the State of Illinois represented in the General Assembly:* That it shall be the duty of the boards of education and of all boards in charge of educational institutions supported wholly or partially by the State to provide for the physical training of pupils of such public schools and educational institutions in all grades, and to include such physical education and training in the courses of instruction regularly taught therein.

"Section II. All boards of education and managing boards of such educational institutions shall make proper and suitable provisions in the schools and institutions under their jurisdiction for such physical education and training for not less than one (1) hour of each week during the whole of the school year."

To anyone who has studied the educational system of our state it is quite evident that this law has been very largely inoperative. It would seem that the physical well-being of school children would assume just as important a place in the minds of those responsible for the framing of public school curriculums as would algebra, English, or any other subject now taught in the public schools. Some considerable number of people must have been interested in placing physical training in the public school curriculum in 1915 or such a law would never have been placed on the statute books. The situation as we find it to-day is somewhat difficult to explain when one stops to think out how high was public interest in this subject during the recent Great War. We have been told over and over again that if the hundreds of thousands of young men rejected by exemption boards because of physical disability had received the proper kind of corrective physical training while students in the public schools they would have reached the years of manhood with no such handicap. Physicians constantly remind us that thousands of people are living on the border line between health and sickness and that a comparatively simple injury or disease assumes formidable proportions because of a weakened constitution or lack of physical reserve. Campaigns for good health have been conducted through the medium of the public schools by the Red Cross, Anti-Tuberculosis Societies, etc. Our children are coming home from school every day informing us of definite instructions given by the school nurse with reference to the care of the teeth, balanced diets, and the advantages of personal cleanliness.

Is not the situation rather unique when such outside agencies having no place in the regular school curriculum call our attention to the physical defects in our children? Yet the schol itself is providing very few if any corrective measures to insure healthy bodies. Certainly the time is here to make proper and adequate provisions for all youngsters from the tender age of the kindergarten through the later years of the high school. This law should not be a dead letter but should be an accomplished fact in every elementary school and high school in the State of Illinois. One hour per week undoubtedly affords very little time for real results in physical training but if every school would devote at least this much time per week I believe those in charge would soon see the wisdom of giving physical training a larger place in the program of study.

There are a number of reasons why this law has never been carried out fully:

First—Very few teachers in the elementary schools have considered that they had enough training in this field to handle this subject. It is true that section 3 of the law provides that the curriculum in all the normal schools of the state shall contain a regular course of physical training for teachers, the course to be taught at least the one hour of each week during the whole of each term of school. I am satisfied that this part of the law has been carefully observed by the normal schools, but there are thousands of teachers in the elementary school system of our state who have never had any normal school training. Out of the 38,279 teachers employed in both elementary and high school systems last year 1,010 had attended no school above the elementary system, 2,644 had attended high school but had never graduated, and 9,925 were graduates of a four year high school only. This makes a total of 13,579 teachers over one third of the total number employed in elementary and secondary education who have had no normal school instruction in the actual teaching of physical training. The qualifications of all teachers both in the elementary school and in the high school must reach a higher level if efficient teachers are to be provided for the carrying out of the provisions of the law.

Second—A second reason why physical training has never been able to claim its proper place in the high school curriculum is the fact that a number of new subjects of pre-vocational or vocational nature have become a part of the high school curriculum and have assumed a more important place in the eyes of both teachers and pupils than has physical training. It seems to me that no greater mistake could possibly have been made. If a boy is to be a successful farmer, lawyer, merchant or professional man, he must reach manhood with a strong healthy body. If a girl is to take her place in the world as a successful house-wife and mother she must also be the possessor of a healthy body. We cannot afford to take twelve years to cramming the heads of our children with algebra, English, history, Latin, etc., only. We must also guide and direct their daily life along the lines of healthful recreation and play.

Third—The third reason why physical training has never been given its rightful place in the school curriculum is the fact that many high school buildings are not provided with gymnasiums or proper rooms where classes can be conducted. The average community has been busy arranging for enough class room space for the routine work of the school and has felt that it had but little time for a "special" room for this "special" subject. A gymnasium has rarely been included in the plans for elementary grade buildings except in urban communities. Even in the high school field a great deal of argument has been necessary to convince some boards of education that a gymnasium has a proper place in the high school building. While the number of high schools has increased rapidly in the last forty years yet many comparatively new buildings have been erected with no gymnasium. In 1880 there were 110 public high schools in Illinois. In 1900, 338 high schools and in 1920, 891 high schools. The increase in the number has been remarkable, yet this increase in number carries with it no corresponding increase in the interest of physical training.

In the past eight years the enrollment in Illinois has been doubled but of the 146,101 pupils enrolled in Illinois high schools last year almost one third of them attended high schools making little or no provision for physical training. These were the pupils in high schools of less than 200 in enrollment. A study of the annual reports recently sent to the Superintendent of Public Instruction from four year high schools reveals the fact that less than three per cent of the schools enrolling 200 pupils or less make any provision for the teaching of physical training. In high schools over 200, physical training assumes a gradually increasing importance up to the schools enrolling 500 pupils or more.

Even in the larger high schools of Illinois the physical training program has broken down in many cases because of the tremendous increase in enrollment within the past few years. Physical training teachers in such schools are constantly discovering that they are inadequately provided with gymnasium floor space, locker rooms, shower baths and other very essential necessities in carrying on this work. The high schools in the City of Chicago are experiencing great difficulty in carrying out a three day a week program. I have recently been in touch with some of the large high schools outside the State of Illinois such as Omaha, Nebr., Los Angeles, California, New York City, N. Y., Terre Haute, Indiana, Atlantic City, N. J., Seattle, Washington, Detroit, Michigan, New Orleans, Louisiana, Minneapolis, Minnesota, Sacramento, California, etc. Those in charge of the physical training in such large high schools all have the same complaint with reference to cramped and crowded conditions, lack of gymnasium space and the necessity of shortening the gymnasium period. Such statements as these are common: "It is a rather hard proposition to follow our outline absolutely at present as we are very much handicapped because of lack of gymnasium space in our schools", or "As we have but one gymnasium for each of our eight schools, we are handicapped for time, space and equipment. The gymnasium is given over half time to girls and half time to boys, so we are now trying to do five days' work in two and one half days. This, you will understand, is a great handicap in working out a progressive program".

I do not flatter myself that I am bringing before you, as physical training teachers, any new facts. You have doubtless been in touch with all of these problems although perhaps your experience has been very largely confined to one or more schools. The conditions to which I have referred, however, are general over the State of Illinois and certainly ought to be improved. I believe that such improvement is to be found in several directions:

First—The lengthening of the school day. The average down state high school has a school day of either seven or eight periods. The larger high schools, of course, save considerable time by a sliding period arrangement providing for two luncheon shifts. By far the larger number of our public high schools, however, close at noon for an hour or an hour and a quarter before the opening of the afternoon session. If these high schools would observe a daily program beginning at 8:30 and closing at 12:15 noon, reopening at 1:15 and operating until 4:15 they would secure the advantage of nine full forty-five minute class periods. With the proper arrangement of the daily class schedule considerable time for physical training could thus be gained. Such a plan is open to this objection—that it provides only for a forty-five minute gymnasium period. This, of course, is too short a time in which to carry out a well organized program. With two of the physical training periods at the close of the morning session and at the close of the evening session a certain amount of time could be gained above the regular forty-five minute period. It seems to me that the program followed by the Seattle, Washington public high schools comes somewhere near the ideal. Class periods in the Seattle high schools are seventy minutes in length and are divided as follows:

10 minutes to dress and taking the roll.
3 to 5 minutes to marching.
10 to 15 minutes to calisthenics.
20 minutes to games or apparatus work. (With the girls dancing takes the place of a great deal of the apparatus work.)
20 minutes to bathing and dressing.

Second—The employment of teachers, both men and women, in every high school who have the proper training for the teaching of this subject. It is necessary, of course, in some of the smaller high schools for such teachers to handle other subjects. But if they have had special preparation in the field of physical training they could do a great deal in arousing favorable sentiment both inside and outside the school for this subject. One has but to read the account of the wonderful demonstration of activities in the department of physical education of the Pasadena High School in March of this year to realize the amount of community support and interest that can be secured by the proper handling of this high school department.

Third—Providing every high school building with a gymnasium. Even in some of the larger communities it is not unusual to-day to find the high school building without a gymnasium. Even in some of the county seat towns in the down state communities the high school is of the old academy type with three stories and a dark basement. In order to secure space for basket ball such high schools have been forced to rent theatres, lodge halls, or other large rooms in the business district. In some cases a gymnasium has been built by public subscription. Many of the smaller high schools are still forced to conduct all their athletics out of doors and to cease operations entirely when the weather becomes inclement.

Fourth—More active interest in the mass drill type of instruction. It makes no material difference from the standpoint of benefits derived whether a pupil participates in football, basket ball, base ball, volley ball, track or any other series of sports. The big point is that not only the stars but all the pupils should be in action most of the time. When track or other sports are held in such a way that eighty or ninety per cent of all the students take part the best results are achieved. This is a matter which in my estimation needs continual emphasis. It is not uncommon to find some of the newer high school buildings in Illinois equipped with splendid gymnasiums, used only for the athletic teams and practically denied to the greater part of the student body. The expense of adding a modern gymnasium to a high school building is hardly justified if this room is to be used only in the development of certain athletic teams.

As I review this paper I am struck with the fact that it has a rather pessimistic tone. On the contrary, I do not wish to discuss this subject from such a view point, as I am convinced that physical training is gradually coming into its rightful place in the high school curriculum. It is only by continually bringing this subject to the attention of boards of education, however, emphasizing the benefits to be derived from such training that we may hope for more rapid progress in the future. It seems to me that the ideal will almost have been reached when we are able to cover a high school program built along the following lines:

1. Individual health examination and personal health instruction. This means the right kind of medical inspection.
2. Instructions covering the care of the body and concerning the important facts of hygiene. In Illinois we have a law requiring that physiology and hygiene be taught from the third grade through the ninth grade. More direct benefit will certainly be achieved by teaching hygiene in connection with physical training.

3. Physical exercises as a health habit including gymnastics, elementary marching, organized play and athletics.
4. Definite instruction in physical training every school day of the school year. I do not believe that two days or three days a week in any sense approaches the ideal procedure. It is only through daily instruction that we are to achieve the best results.

" 'Correctives', Their Place in a High School Curriculum"

Leah Gregg

I shall address myself, not alone to teachers of Physical Education, but to teachers in general. If one is to judge from students here in the University, who come from all over the state, it is certain that there are many places that do not have Physical Education of any description, beyond a few simple recess games. So it is up to you teachers, where that is the case, to see that your High School is keeping pace. Mental growth is so closely linked with physical growth that any investment you make along this line in money or effort will be returned with increased interest. The time has come when Physical Education in schools should be organized and conducted as an educational project, and not as a student amusement or an extra-curricular affair.

Gymnastics is broadly divided into educational and medical gymnastics. Educational gymnastics includes formal gymnastics, dances, sports, etc., working for skill, strength, and health. Medical gymnastics are based on anatomy and physiological principles, working for prevention or correction of definite functional or organic disability or deformity. These exercises should not be undertaken by an inexperienced person. To the same extent that a doctor prescribes medicine, a true teacher of medical gymnastics prescribes exercise. It is a foregone conclusion that such a teacher has had some pre-medics and ideal conditions are for him to work in cooperation with an orthopedic surgeon or a physician.

The name "Correctives" brings to mind an unfortunate meaning. It has a tendency to cause introspection, morbidity, and self-consciousness. It is essential to direct the attention to definite purposes done carefully. In that event the pupil is working with the instructor toward a definite goal, rather than as a patient or a case receiving treatment. "Individual Gymnastics" then is better for a name, but the term "correctives" is not easily uprooted.

The aim in all cases is to make the work progressive, so the student may be transferred to class work as soon as possible.

The history of Correctives begins almost with the history of man. Primitive man exhibited instinctive appreciation of value of exercise. Crude systems were in practice, but it was recognized that certain bodily ailments were benefited by physical activity. The Chinese at 3000 B.C. had a system of so-called medical gymnastics. The Egyptians and Hindus have been found to have practiced it. The Greeks and Romans employed exercise for its beneficial effect and Pliny recognized early the value of exercise for mental states.

Correctives as we know it today is the newest branch of Physical Education. It was recognized that physical abnormalities should be cared for as well as mental abnormalities. Hospitals now are not complete without corrective departments. *Prevention* is more largely incorporated as we know it today. For example: there are many girls here with curvatures; over 50% able to do other work. We are, however, equipped to give them specialized work until improvement is noted, or until we are sure that an increased curvature is prevented.

Most students here in the University are from state High Schools—30% claim to have had no physical education. If there is carefully supervised physical education in your high school, then a small percent are sent poorly

equipped. If there is a corrective department the percent of those not fitted to compete is lessened.

Each girl is examined on entering the University and it is decided whether she takes regular or corrective gymnastics—then another examination is given those girls needing corrective work, and a program of exercises is made out for them.

You may say you are not equipped to do this. If you *have no* physical education department, extreme cases will stand out and should be taken care of. Your interest merely would help, for you might take them to a hospital clinic and be the means of preventing future difficulty. If you *have* a physical education department, you should see that less than 1% are excused from exercise. (This, of course, is possible only where there is also corrective work.) Doctors excuses are easy to get and many times mean nothing. It therefore stands to reason that it is unjust to the student. For example—an infantile paralysis case (in the sense that a state of non-development exists) will many times be kept out of exercise, and harm instead of benefit is the result.

Teachers of Physical Education do something for these girls and boys. You can find a small room not in use; give this to them and possession will make them take pride in it. Make the work interesting and adapt games that they will be able to play. They will work through program eagerly, for promise of a romp at the end of hour. "Show an interest—show enthusiasm and at all times be optimistic."

Teachers of subjects other than physical education have the opportunity to see the child outside of the gymnasium. Cooperate with the Physical Education department and report habitual bad posture and work up some good ideals of posture in your own work. Check up on yourself. Your posture influences your students. How do you stand?

The most common abnormalities are (1) Antero-posterior faulty postures (deviations from properly adjusted body in plane from front to back); (2) Scoliosis (lateral curvature); (3) Abnormalities of feet. These are so-called orthopedic conditions, having to do with body structure. Besides the orthopedic conditions, the teacher must be prepared to meet other needs of the individual for special works, such as; menstrual disturbances, constipation, general low vitality (indicated by underweight), aenemia, ptosis, nervous instability, etc.

Bad posture may be the cause of many evils. A simple analysis of good posture is: (1) body well balanced, (2) weight evenly distributed on both feet, (3) knees and hips extended, (4) body tall as possible, (5) head erect—easily poised, (6) chest elevated, (7) abdomen retracted. Never say "shoulders back" unless you emphasize "abdomen in". It is much better to say "stand as tall as possible" for better results are obtained.

Values of good posture are: (1) hygienic, (2) economic, (3) social, (4) esthetic.

Types of faulty posture are: (1) round shoulders, (2) hollow back, (3) sway back, (4) round back, (5) combination of all—"debutante slouch."

Posture is a by-product of healthy living and proper bodily activity. Man has became standing around, sitting down animal, so body adapts itself automactically and poor posture results.

Some causes to look for: (1) muscular weakness, (2) habitual assumption of faulty posture, (3) poorly adjusted school seats and desk, (4) defective eyesight and hearing, (5) carrying books, (6) clothing, (7) fashion, (8) shoes.

"Posture is not to be put off like a garment. It should proclaim at all times a well co-ordinated mechanism, prepared at all times to meet any physical requirement in best manner with greatest ease."

16. PHYSICAL SCIENCE SECTION

A large group of Physics and Chemistry teachers met in the Physics Building Friday morning, to hear the inspiring addresses of Dr. Watson of the University on "Tones of Bells" and Dr. Hessler of Knox College on "The Idea of Electrons and Modern Science Teaching".

Physics Sub-Section

The first paper was presented by Dr. Camp, of the University, on "An Evaluation of Standard Tests". The material presented was much appreciated by the Physics group.

Mr. Smith, of the University High School, conducted a recitation on "Power". The students reciting were graded by the teachers present and, after the class was dismissed, the results were discussed. This work was so appreciated by the group that they extended a vote of thanks to both Mr. Smith and his class.

Chemistry Sub-Section

The following program was given before the Chemistry teachers:

How to Get a Closer Relation Between the Chemistry of the High School and of the College.

From the Standpoint of the High School—Mr. Westlund, Decatur.

From the Standpoint of the College—Mr. Reedy, University.

Laboratory Resourcefulness in the Smaller High Schools—Miss Fogarty, Stonington.

Teaching the Fundamental Quantitative Relationships in Elementary Chemistry—Prof. Adams, Normal, Ill.

The principal papers and discussions are given below.

Tones From Bells

By F. R. Watson

In presenting this discussion before the High School Conference, the effort is made to illustrate the object of the teaching of physics; namely, to train pupils how to interpret natural phenomena by a systematic investigation. The bell is struck and the tone is heard. Here Nature presents a phenomenon which excites interest and gives rise to an inquiry about the nature of the tone,—why it is different from other tones,—and just how the bell acts to give out this sound.

These questions are not readily answered at first thought, but a little consideration shows how an explanation may be found. We first investigate simpler tones and then lead up to the case of the bell which, as we shall see, is rather complicated.

We take as a first illustration the vibrations of a stretched metal string. This can vibrate in a single loop giving a fundamental tone; it can also vibrate in two loops giving the octave and in three or more loops. Following this, we

consider a rod, which is like a stiff string. It vibrates much like the metal string, but in a somewhat more complicated manner. From this case, we study the vibrations of a flat square plate, which may be thought of as made up of a number of rods placed side by side. Here again the vibrations are anticipated by remembering how the rod vibrated. In this case, the modes of vibrations are made visible by the arrangement of sand particles placed on the plate when the latter is bowed,—the so-called Chladni figures. We proceed naturally to a flat circular plate and study its motions and then to a curved plate which really brings us to the bell shape. The vibrations in this case are again anticipated by the preceding experiments. When the bell is struck, a vibration is set up with definite nodes and loops. It may be shown that the circular shape of the bell is transformed periodically into ellipses with four nodal points on the rim of the bell. It may also be easily shown that these nodes are not at rest, as we usually think of nodes, but that they have a tangential motion. This is illustrated by rubbing the rim of an ordinary drinking glass with the finger so as to generate a tone. A battery jar also furnishes an excellent means of showing the nodes and loops set up in the vibration.

Turning now to the bell, we obtain a complex tone, in which, however, we find a fundamental vibration suggested by the action of the battery jar. At the same time we are puzzled by a beat tone. On further investigation, we find two fundamental tones, nearly in unison, and that the nodes and loops are fixed in the bell instead of moving around as in the case of the battery jar.

The tones of bells are found in several ways. One of the simplest is to sound a stretched string near the bell when it is struck and then adjust the length of the string until it gives a note in unison with the bell. But tones are set up when unison is nearly reached that assist in the solution. The various tones of the bell can be found in this manner. An adjustable organ pipe may me used in the same way as the string. A third means is to touch the bell with a vibrating tuning fork that is adjusted to bring out the bell tone by resonance. A fourth method is to listen through a doctor's stethoscope to the sound picked up by an adjustable resonator. It is thus seen that a number of methods are available for finding the bell tones.

If we turn now to the literature of the subject we find in the Encyclopaedia (and in other books) under "Bells" an interesting account of the subject. Bell manufacturers recognize five main tones in a bell. Beginning from the highest, these are called, for a church bell, the "normal", the "fifth", the "tierce", the "fundamental", and the "hum-tone". The highest tone is the one that fixes the pitch of the bell and not the lowest as one usually expects. The endeavor of bell-founders seems to be to make the "hum-tone", "fundamental" and "normal" successive octaves; the "fifth" and "tierce" being respectively the major fifth and a major and minor third above the fundamental. This, however, seems never to be obtained. The great aim is to make the normal and fundamental a true octave apart, the others being of less importance.

In conclusion, we look back over the investigation and, as teachers, see that this phenomenon presents an opportunity for the training of pupils to search systematically for the explanation. When the bell is struck, Nature says "Here is a secret, can you find the answer?"—thus offering to the pupil with vision a challenge to break down with intelligent cunning the barrier that hides the truth from the unobservant and to reap to himself the satisfaction that comes to those who learn to appreciate the wonders of Nature.

The Idea of Electrons and Modern Science Teaching

John C. Hessler

It will be evident to everyone that the scope of the subject, as stated, is far beyond the proper limits of this paper; hence the writer will confine himself to some of the effects of the electronic view upon the problems of Chemical Science. Nor is is necessary for such a paper as this to give in detail the experimental work which forms the basis of the belief in electrons. The literature, and many textbooks, contain ample expositions of this nature. Two papers, published recently in *School Science and Mathematics,* give excellent, popular summaries of the present state of our knowledge of atomic structure, and are of particular interest to teachers of Chemistry. These are: "A Presentation of the Electrical Theory of Valence", by W. H. Spurgin, of the Hyde Park High School, appearing in the number for March, 1922, and the "Atom of the Chemist", written by Professor W. H. Rodebush, of the University of Illinois, and published in the number of November, 1922. An admirable, recent exposition of the physical side of the subject is that of professor J. C. McLennan, of the Physical Laboratory of the University of Toronto, given in *Science* for March 3, 1922.

The articles named give us some idea of the intellectual and philosophic revolution created by the new views of matter which have arisen in this generation. What shall those of us who teach Chemistry do with these new conceptions? Shall we teach them in large doses to beginners? Shall we ignore them? Shall we teach them as removing the old landmarks, or as the fulfillment of a century of prophecy?

The opening years of the 19th. Century gave the chemists of the time great satisfaction. The 100 years that had passed since the propounding of the Phlogiston Theory had been full of triumphs. The science had been rescued from the doctors of medicine by the work of Becher and Stahl, and the common gases had been isolated and studied. Then, in the closing quarter of the century, the inadequate theory of phlogiston had itself yielded, though grudgingly, to the common-sense views of Lavoisier and his school. The use of the balance and the eudiometer had come in, and the weight relations of many of the elements had been established by the patient work of Lavoisier, Richter, and others. Then came the Atomic Theory of Dalton, deduced, it must be confessed, by a shrewd intuition, and without adequate support, from the Laws of Definite and Multiple Proportions. Could Dalton but realize into what a maze of speculation he led mankind by his assumption that matter is composed of atoms, and that combination of simple substances is a combination of their atoms!

Dalton's numbers were, of course, only combining weights. Berzelius' determinations of the atomic weights of the common elements were far more accurate, and opened the way for the first unifying arrangement: the Law of Dulong and Petit, according to which the heat capacities of the atoms are practically the same, or, to state the law otherwise, about 6.4 calories are required to raise the temperature of one gramatomic weight one degree centigrade. However, the numbers necessary for the success of Dulong and Petit's Law were often different from the accepted atomic weights; so the rule was not considered to have much significance for Chemistry until an greement was reached regarding the atomic weights. This did not come until about 1858, when the hypothesis of Avogadro gained reasonably general acceptance, and the distinction between atomic weights and molecular weights was appreciated.

A table, or grouping, of all the elements came quickly after the standardization of the methods of determining atomic weights. The first was the arrangement of Newlands, in 1863. Newlands' Law of Octaves, greatly improved by Mendelejeff and Lothar Meyer in 1869, was the first real unification of the diverse elements of Chemistry. But what was there to the periodic

Arrangement? Some saw in it a great regularity, with the possibility that all the elements might turn out to be compounds of a new order; to others it was only a remarkable coincidence of some value in aiding the memory, but without any underlying unity. Doubtless the Periodic Grouping would have been of only passing interest if it had not been for the bold assurance of Mendelejeff in predicting the properties of the elements that belonged in his blank spaces. The discovery of gallium, scandium, and germanium filled chemical philosophers with enthusiasm; for it seemed to establish the unifying arrangement of the elements beyond the possibility of gainsay. The discovery of the rare gases introduced a whole new family into the grouping, but it also introduced another exception; the atomic weight of argon could not be made less than that of potassium, even though men greatly desired it, just as they desired to find the atomic weight of tellurium less than that of iodine, but could not. Then there was the long list of rare elements which could not be fitted into the table at all. The discrepancies in the table seemed impossible of reconciliation.

The next contribution to the periodic arrangement came from an unexpected source. Laue found that ordinary crystals give spectra of X-rays, just as diffraction gratings give spectra of light rays. The conclusion he drew was that as the distance between the lines of a diffraction grating was of the order of a wave length of light, so the distance between the rows of the particles in a crystal must be of the order of the wave length of X-rays. By allowing the cathode rays of the X-ray tube to impinge upon different materials placed upon the anti-cathode, Moseley found that X-rays of somewhat different wave lengths were produced. These, of course, gave different X-ray spectra. The higher the atomic weight, the shorter was the wave length of the characteristic X-rays. Thus moseley was able to arrange the elements in a series in the order of their X-ray wave lengths. This order was the same as that of the atomic weights, except that argon came before potassium and tellurium before iodine, and cobalt before nickel. These discrepancies of the periodic table thus disappeared. The atomic numbers assigned by Moseley are whole numbers, beginning with one. Hydrogen is the first in the series, as before, and helium is second, lithium third and so on. The atomic weight of an element is roughly twice its atomic number. The rare-earth metals, with atomic weights between 59 and 72, fit into the series of atomic numbers, although they do not fit into the atomic weight arrangement. Does the substitution of atomic numbers remove all of our troubles? Bancroft calls attention to the fact that the Periodic Law is still very much of a mystery to us, and that some of the troubles still remain.

It is now nearly a generation since a prominent chemist made the facetious remark that ions were like a certain popular remedy, and the children cried for them. We wonder what he was moved to remark concerning electrons; for they are certainly having their day. All the world knows the story of radium, and of its spontaneous giving off of positively charged *alpha*-rays, or atoms of helium; of *beta*-rays, or negatively charged electrons; and *gamma*-rays, identical with X-Rays. But what the "world" as distinguished from the scientist has been chiefly interested in is that, in its opinion, the study of radium had utterly upset all the calculations of the scientist, and had disproved the existence of atoms. In an experience of some years the writer has rarely had to consult the morning paper for each sensational new discovery of atomic disintegration; his business friends were almost sure to call it to his attention. Perhaps they wanted the assurance that the atom was not wholly discredited. At any rate, the business man was more disturbed over the possible destruction of the atom than was the chemist himself. One who has been in contact with modern methods of instruction must have observed a growing tendency among chemists to "shy" away from too many dicta regarding the atom. In equations we have specified "atomic weights" instead of atoms, and substituted "gram-molecular weight" and "gram-molecular volume" and even "gram-atomic weight" for much glib talk about atoms

and molecules. The truth is that we have shrunk from the idea of the atom as the residue of all decomposition, a ne plus ultra of the imagination.

That the atom is complex does not affect the atomic weights in any serious way. The new ideas of the atom have only made the atom seem more real. It is no longer an indissoluble residue, but a unit built up in a regular way. Furthermore, the relative weights of the atoms are capable of a more or less reasonable interpretation, and the valences of atoms are more than convenient aids to memory in the construction of formulas. Even the assumption that there are isotopes, or elements with more than one atomic weight, does not really shake the Law of Definite Proportions; it only amends the law to allow a definite number for each isotope.

The atom of Dalton was a very simple unit; that of Rutherford, Lewis, Langmuir, and Harkins is far from simple. But it is in agreement, to some extent at least, with the properties for which it is held responsible. The atomic numbers (Table I) suggest the real order of the elements according to properties; the atomic weights are the relative masses of the atoms. An atom has a positively charged nucleus, with

TABLE 1

Element	H	He	Li	Gl	B	C	N	O	F	Ne
Atomic Number	1	2	3	4	5	6	7	8	9	10
Atomic Weight	1	4	7	9	11	12	14	16	19	20
Element			Na	Mg	Al	Si	P	S	Cl	A
Atomic Number			11	12	13	14	15	16	17	18
Atomic Weight			23	24	27	28	31	32	33.5	39.9

negatively charged electrons about it, and at some distance as compared with the size of the nucleus. The hydrogen atom may fairly be supposed to have the unit positive charge. The number of negative charges in the periphery of the atom must, according to our notions of electric neutrality, be equal in the number of net positive charges in the nucleus. Practically all the mass of the atom is in the positive nucleus, and the atomic weight of hydrogen is very nearly 1.

The combination of hydrogen with chlorine will illustrate the new idea of the union of elements. At first both are neutral, and we may represent them by H and Cl. Then the negative electron of the hydrogen atom passes over to the chlorine; as a result the hydrogen is positively charged, and the chlorine negatively charged.

$$\overset{\circ}{H} + \overset{\circ}{Cl} \rightarrow H \overset{+}{} + Cl \overset{-}{} \rightarrow H + - Cl.$$

The hydrogen atoms now "combine" with those of chlorine, that is to say, the two kinds of atoms are held together by electrostatic forces, and we have a neutral substance, hydrogen chloride. Such a compound is called a "polar" compound. The term is essentially the same as "ionogen", used in the study of electrolytes. When the hydrogen chloride is dissolved in water, or in some other dissociating solvent, these electrostatic forces cease to operate, in part at least, and we have the equilibrium between the "molecule" of hydrogen chloride and the oppositely charged ions. We know these ions are charged because they move toward the electrodes in electrolysis.

When we pass from the reasonably active element hydrogen to helium, of atomic number 2, we find an element of no apparent activity. We assume that its atom contains two net positive unit charges, and two

TABLE 2

Element	H	He	Li	Gl	B	C	N	O	F	Ne
Atomic Number	1	2	3	4	5	6	7	8	9	10
Valence	1	0	1	2	3	4	5	6	7	0
Element			Na	Mg	Al	Si	P	S	Cl	A
Atomic Number			11	12	13	14	15	16	17	18
Valence			1	2	3	4	5	6	7	0

electrons. Apparently this arrangement produces a perfectly satisfied system. There is no tendency for an electron to be lost or gained. But with lithium, of atomic number 3, the case is different. Here the core of the atom has three positive units, and there are three electrons. Why is not the atom satisfied with itself, as in the case of helium? We know only that it is not; so we conclude that two of the electrons are more closely associated with the nucleus than is the third, and that only this third one can be lost. The lithium atom can lose an electron to an element like fluorine or chlorine, and then combine with the atom of this element, as in the case of hydrogen and chlorine. It has a valence of 1. We express the structure of the next atom: that of glucinum, as a nucleus containing four positive units, two electrons near the nucleus, and two electrons farther away, and hence able to pass off to an element like fluorine. Glucinum has a valence of two. Boron has five positive units and five electrons, and a valence of three. Its atomic number is 5. When we come to fluorine, with an atomic number of 9, there must be 9 positive units in the nucleus, two electrons close to the nucleus, and 7 electrons in the periphery of the atom. The valence is 7. The next element is neon, of atomic number 10. If we follow the method we have been using with the elements of lower atomic number, the neon atom should have 10 positive units in the nucleus and 10 electrons, two of them close to the nucleus and 8 in the periphery of the atom. The next atom is that of sodium, of number 11.

What is the arrangement of the nuclei and electrons in the sodium atom? If its structure is like that of neon, the element of next lower atomic number, there should be 11 unit positive charges in the nucleus, and 9 electrons farther away. These electrons "at a distance" are the valence electrons of the elements from lithium to fluorine, inclusive; hence sodium would seem to have a valence of 9, whereas we know its valence to be 1. We therefore conclude that neon, of atomic number 10, must have a condition analogous to that of helium, and that the condition of affairs in sodium must in some way resemble that in lithium, its relative. In the helium atom there are two positive charges in the nucleus, and the two electrons are arranged about the nucleus in such a way that none can escape, and the element has a valence of 0. In the building up of neon from helium an outer ring of 8 electrons is reached, and forms a stable arrangement about the nucleus with its 10 positive charges, and the inner ring with its 2 electrons. The valence of neon is also 0, and the element loses no electrons.

We thus get the idea of a series of layers, or "shells", of electrons, which have been compared with the layers of an onion. In the hydrogen atom there is only one electron to represent the shell; in the helium atom there ar two. Then the first shell seems to be complete, and a new one is formed. Lithium has not only the inner shell of 2 electrons, but has one electron toward a second shell. We have called this extra electron its valence electron. In neon this second shell is complete, and has 8 electrons. In sodium a third shell is begun, each atom up to that of argon having now, around its nucleus, an inner shell of 2 electrons, a second shell of 8 electrons, besides its own "valence" electrons, which are part of a still outer shell for atoms of higher atomic number than argon.

Up to this point we have been considering the positive nucleus as a certain number of positive charges. Thus the nucleus of the hydrogen atom has one positive unit, that of helium, two such units, and so on. But we must

remember that practically all the mass of the atom is in its positive nucleus. The atom of hydrogen may have one such nucleus, but the atom of helium must have 4, to make up its atomic mass, which is 4. We are thus led to the assumption that the positive nucleus of helium must have 4 positive unit charges, or *protons,* and that it must also have 2 electrons in close combination with them, so that the net positive charge in the nucleus is 2, the same as the atomic number.

If the positive nucleus of hydrogen goes to make up the nucleus of helium, why not of the other elements? This is exactly the assumption made regarding the structure of the atoms above helium: their nuclei are made up of the positive nuclei of the atoms of hydrogen and helium. As a result, the atomic weights should all be practically *whole numbers.* We thus come back to the old hypothesis of Prout, put forth in 1815, that all the atomic weights are whole numbers. But what a different background there is now as compared with the days of Prout!

The new theory of electrons has a suggestion regarding isotopes. If, in the building up of one atom from the one below it, a unit positive nucleus and an electron should add themselves to an atom, the new nucleus might enter the nucleus of the first atom, and the electron might enter the shell of electrons. In such a case the new atom would be of the next higher atomic weight and number, and would have the next higher valence. But if both the added nucleus and electron were to enter the positive nucleus of the lower atom, we would have added mass, but no higher valence and no change of chemical properties. In other words, we would have an isotope of the original element.

We need go no further in the theory of electrons in this paper. Enough has been said to indicate how fruitful, from the teaching point of view, the theory may become. The danger in Physics is that the mathematical part may obscure the natural phenomena, which, after all, form the subject matter of the science. In the same way the theory of Chemistry may be taken as a substitute for the study of substances and the phenomena which form the basis for theory. The field of speculation may become so attractive that it may carry us away from solid science teaching. But the reverse may also be true: in our quest for the solid ground of the "How" we may forget the "Why" which is the driving force of investigation, as it is of rational progress. We cannot do without theory for very long. The new view of matter will serve its best purpose, in secondary school science, as a background for the teacher, so that he may gradually adapt it to his own thinking and afterwards to his teaching. For the alert student the new idea of combination, valence, and the structure of matter will provide a goal to be reached, an inspiration to learn the "hard matters of the law" for the sake of its wonderful generalizations.

How to Get a Closer Relationship Between the Chemistry of the High School and College

E. H. Westlund
Decatur, Illinois, High School

The establishment of a coördination of high school and college courses so that the latter may follow the former without discontinuity and in some cases without the sort of repetition that would be fatal is being developed more and more. The question of a closer relationship between the high school and college is an interesting one and very important. From the standpoint of chemistry as well as of other subjects close coöperation between high school teachers and college instructors is very essential for the benefit derived from this coöperation is mutual. Other factors involved in answering this question are the eagerness of the teacher to become thoroughly trained and master of

his subject so that methods of presentation may be the very best possible under the prevailing conditions; and the ability of the teacher to create an interest in the subject with the intention of building up a strong background. How to get a closer relationship between the chemistry of the high school and college must be looked at from the standpoint of the college as well as from that of the high school.

Chemistry is a subject beyond the conception of a large number of students when they first enter into the study of it. Our objective in teaching chemistry is to give to the student a true knowledge of matter and in what ways and under what conditions it changes. The elementary principles which are fundamental must be taught thoroughly and then the applications of chemistry to every day life.

A student who has caught the true meaning of chemistry during his high school course frequently believes that he has already learned chemistry and when in college may start in by slighting his work, especially if the college gives him much repetition of his high school course.

With standardized courses and common standards this repetition, which dulls the chemical interest, could be avoided and the student's interest would not wane. A well developed course, standardized equipment and a capable teacher are factors very essential in creating a closer relationship between the high school and college.

The high school course must be so outlined that it fits the needs of students who do not go to college as well as for those who do. In every phase of high school work the teacher must strive to produce some degree of judgment in students' minds. Necessarily, accomplishment will often fall far short of this aim in the high school yet no teacher will fail to attempt it. If this training alone is given by the teaching of chemistry, then we shall not have labored in vain even in the case of students whose formal education ends with their high school days.

The chemistry course given at Decatur high school, Decatur, Illinois, is organized in that way. The elementary principles which are fundamental are included mainly in the first semesters work. These fundamentals involve the gas laws, the atomic and molecular theory, weight relations, valence, formulas, equations, classification of elements and compounds into metals, non-metals, acids, bases and salts.

Chemical calculations from equations and many other but not too many problems are involved.

The applications of the elementary principles are brought out more during the second semester. During the second semester the girls, who so desire, may enroll in a class the purpose of which is a study of the application of chemistry in the household. Last year a class in agricultural chemistry was organized. This was part of the Smith-Hughes work and was made up of students studying agriculture. The purpose of this class was to bring out the application of chemistry to agriculture.

The fundamental things, however, are presented to all classes in the same manner. In any of the three courses the student is thoroughly trained in the elementary principles which are to be a basis for further work, should he continue his work in college.

To get a closer relationship between the chemistry of high school and college several questions must be answered.

Is the high school graduate helped toward his work in college chemistry?

What does the college demand in chemistry that the average high school cannot give?

Does the college recognize what is done in high school chemistry, both in smaller and larger schools?

Are college classes in Chemistry I divided so that students who have had chemistry in high school are segregated from those who have not?

To what extent do colleges segregate students?

Upon what basis is segregation made?

What are the fundamental things to be brought out in high school chemistry?

Should high school chemistry be merely informational?

Should high school chemistry involve much mathematics and quantitative experiments?

Are high school teachers merely to create interest?

A questionnaire made up of eight of the above questions was sent out to twenty universities and colleges. This list included the Universities of Chicago, Indiana, Iowa, Kansas, Kentucky, Michigan, Minnesota, Missouri, Washington, Nebraska, Columbia, Cincinnati, Lehigh, Tennessee, Virginia, Wisconsin, Purdue, Illinois, Wabash College, Iowa State College.

Thirteen replies were received and the results bring to light the extent to which this question of a closer relationship between the chemistry of the high school and college is being considered.

I have summarized the answers to the questions below.

The eight questions making up the questionnaire are as follows:

(1) *Is the high school graduate helped toward his work in college chemistry?*

Twelve answered *yes,* one answered *no.*

The affirmative answer however, is based upon the method of instruction in the high school.

(2) *What does the college demand in chemistry that the average high school cannot give?*

Eleven answered *nothing.*

Laboratory work with standard solutions, a series of lecture room experiments executed with skill and properly conducted laboratory work, with periods of sufficient length, were other answers received.

It is true that the large high schools have an advantage over the smaller schools in the way of equipment; nevertheless, the fundamental facts in chemistry can be as thoroughly and clearly explained in the smaller schools as in the larger. The teacher's knowledge of the subject, his aggressiveness and ability to present material clearly are requisites sufficient to teach the subject pretty thoroughly even though with meager equipment.

(3) *Does the college recognize what is done in high school chemistry?*

To this question eleven answered *yes,* one answered *no.*

Recognition of the work done in high school depends largely upon the students' high school training.

(4) *Do you have Chemistry I classes divided so that students having had chemistry in high school are segregated from those who do not?*

Ten answered *yes,* three answered *no.*

The methods of segregation differ, however. As examples I have listed a few.

At Columbia students who have had a year's course in high school chemistry take college chemistry known as 3-4. Those who have not had high school chemistry take a half year course known in Columbia University as Chemistry A, and then in 3-4.

At the University of Missouri a division of the students was made over a period of ten years but was recently abandoned in favor of the following: Students with one year high school chemistry may enter the work of the second term directly, or take the first term's work for four hours' credit (normal credit being five hours), or take the lectures (three per week) and conferences (one for two hours credit). About one-third of their students go into the second term's work directly.

At the University of Kansas, students are given the same courses of lectures in inorganic chemistry but are assigned to different recitation and laboratory sections.

The University of Wisconsin, knowing the high school work to be good gives the students having had high school chemistry, advanced laboratory work.

At Millikin University, students with high school chemistry are placed in one class. Much stress is placed upon the development of the student's mathematical ability and knowledge of the fundamental laws of chemistry. The laboratory work during the first semester is largely quantitative. The second semester is devoted to qualitative analysis.

(5) *What are the fundamental things to be brought out in high school chemistry that will be of help to students taking up chemistry in college?*

I have listed all the fundamentals that were sent in, in answering the above question. However, all agree on four or five fundamental things.

The elementary principles, as gas laws, weight relations, properties of the more usual elements and compounds, are essential. A student should have a clear notion of the nature of matter and of chemical changes.

A knowledge of valence, formulas, equations, chemical arithmetic, molecular theory and its application, chemical equilibrium, reversible reactions, ionization and electrolysis should be developed.

Habits of accuracy, correct statements of definitions, carefulness in observation must be encouraged.

A thorough laboratory drill and drill in answering questions are very essential. The greatest weakness is the student's lack of positiveness in what he knows.

(6) *Should high school chemistry be merely informational?*

All answered *no*.

No doubt, much general information should be given for the benefit of not only those who are going to college, but particularly for those who are not.

The high school boy or girl is an impressionable person. He or she wants to know *why*. The course should include illustrations of familiar things to stimulate interest. Mere information does not prepare a student for a second course in general chemistry in the University. Information and description are absolutely necessary. Mere information does not answer *why*.

A student's scientific curiosity should be encouraged. Stimulate interest and results are bound to follow.

(7) *Should high school chemistry involve much mathematics and quantitative experiments to involve mathematics?*

Not too much mathematics and a few elementary quantitative experiments would summarize the answers received.

Since the ordinary chemical calculations are merely problems in applied arithmetic involving simple proportions, drill in this line should be encouraged. Too much mathematics will destroy a student's interest. The high school is not the place for highly refined quantitative experiments.

(8) *Are high school teachers merely to create interest in the subject?*

Twelve answers were negative. One answer in the affirmative. This was "*yes* providing the instruction included science in general".

The world will not pay for mere interest in a subject but only for definite information. Interest is essential but not the sole aim. If a teacher's purpose is to create interest only, I believe he ceases to be a teacher. Avoid too much information otherwise the objective of self thinking is destroyed.

Students that do not go to college should get a grasp of the nature of chemistry, its methods, and its applications; those proceeding to college should get the fundamental notions well developed.

In conclusion I should say that the results of the questionnaire show that the colleges are recognizing the work that is being done in high school chemistry. A closer relationship means that thorough methods of presenting the subject to high school students must be developed so that they will have learned to think and know the true meaning of chemistry and its application.

The student so trained may continue the study of the subject in college with little repetition apart from students who have not had chemistry in high school.

A thorough training in the fundamentals gives the college a basis for building courses which will hold the enthusiasm and interest of such well-trained students.

How to Get a Closer Relation Between the Chemistry of the High School and the College: From the Standpoint of the College

By J. H. Reedy, University of Illinois

The matter of the ideal relation between instruction in high school and in college is not merely one of cooperation, but also of adaptation of the work to the prime needs of the student. Very naturally, in the original working out of the general problem of affiliation, the idea of cooperation has been given primary consideration, and adaptation of work has been somewhat secondary. But now that affiliation is for the most part an accomplished fact, the question of differentiating high school work to suit the needs of the student requires consideration.

College teachers, it is generally agreed, have had a more or less dominating influence in the development and standardization of high school chemistry. As a consequence, the college point of view has prevailed as to the purpose and nature of the course, with the result that high school chemistry has been largely a small-sized imitation of the first-year college course. This course has been followed without regard to the fundamental question, whether such a course is suitable for the student who does not continue his chemistry in college.

Exact figures are not available, but I think that I am safe in saying that not more than 25% of the students who study chemistry in the high school ever go to college, and of that number only a part take collegiate chemistry. The question is, which should determine the nature of the high school course —the seventy-five or more boys and girls who go sooner or later into practical life, or the smaller group who go on with their chemistry in order to fit themselves for some specialized profession. This raises the more fundamental question, what is the purpose of high school chemistry, anyway? Is it valuable only in that it serves to purchase one more entrance credit to get into college on? If that is true, strict honesty requires us to exclude from the course all those who will probably not become collegians.

There is a certain group of college men whose theory is that the high school chemistry course should be planned to fit the needs of those who are contemplating college work, and that such a plan very fortunately may not be so bad for the rest of the class. It is that theory that I want to combat today. I hold that the high school course should be designed so as to give the maximum good to the maximum group; and further, instead of high schools adapting themselves to college conditions, colleges should make their entrance credits conform to high school conditions. I repudiate the old doctrine *in toto* that high schools exist wholly as feeders for colleges.

For the boy or the girl who is not going to attend college, what then is the ideal chemical course? Recently general opinion has been rapidly coming to the conclusion that the practical man or woman of to-day should know certain fundamental things about chemistry. The science is becoming more and more one of the world's most practical agencies, improving old industrial process and creating new ones that are to advance civilization and promote the well-being of the race. No man can be a real citizen of to-day's world, can be at home in the vast maze of conditions that limit or extend human activities, without knowing something about what Slosson has aptly called "creative chemistry." More than 75% of our people must get this in the high school or not at all.

The best way to emphasize the importance of this need for general chemistry is to review the history of chemical instruction in England. Until of late years, chemistry (along with the other physical sciences) was not generally included in the curricula of the secondary schools of England. Even in the leading universities, like Oxford and Cambridge, it was not ranked as comparable in educational value with Latin and Greek, Mathematics and Philosophy. Inevitably the masses of the British people knew little or nothing of what chemistry really meant, and were completely out of sympathy with its possibilities and purposes. I am going to let a British scientist speak of this situation for me. I am going to quote two passages from "Chemistry in the Service of Men"—a volume written during the Great War by Professor Alexander Findlay, professor of Chemistry in the University of Wales and one of the world's outstanding chemists: "The English people as a whole, being ignorant of science, have mistrusted and looked askance at those who alone could enlarge the scope of their industries and increase the efficiency of their labors. And so we have witnessed in the past an appalling and needless waste of our national resources, and in many cases industries have languished and succumbed. ..... The mental outlook and the attitude of the people as a whole towards science must be changed, and the scientific habit, and a spirit of trust in science must be cultivated." Yankee industry and progressiveness does not propose that such a lament shall ever be written about the American people.

Conceding that it is self-evident that chemistry should have a large place in the program of the American high school, the next question is what should be the character of the course. First of all, it should be quite a different affair from the Freshman course in college, which must be largely theoretical, since it must serve as a foundation upon which to build courses in analytical, organic, industrial and physiological chemistry. High school chemistry, on the other hand, should be descriptive and informative, and should touch everyday life at as many angles as possible. The teacher who plans his high school chemistry course with this definite end in view will find that it differs from college chemistry in a surprising degree.

The time at my disposal to-day is not enough for me to outline such a course in any detail. However, I am going to indicate as specifically as I can certain things that I think ought to be included and certain others that I think ought to be omitted.

The usual discussion of the elemental gases should be curtailed considerably. The student need not know much more about hydrogen and oxygen than the simplest preparation methods, their physical properties and their practical uses. The kinetic and atomic theories should be omitted entirely, as well as the gas laws, including Gay Lussac's law, which are important only in the determination of molecular and atomic weights. When it comes to nitrogen, the student should be made to know the critical importance of the nitrogen cycle in nature, how nitrogen is "fixed" either by bacterial action or by thermal and catalytic means. Of course he should also know the properties of practical importance of nitric acid and ammonia; of sodium chloride, hydrochloric acid and bleaching; of sulfuric acid and its action on salts of low boiling acids.

The general subject of combustion should be insistently presented, along with that less spectacular form of oxidation, decay. There is no better evidence of the abject ignorance of the masses on the subject of combustion than the appearance in the daily press of advertisements of a gas-making machine which, it is claimed, "burns air". Another advertiser manufactures a contrivance which he wishes to attach to the carburetor of motor cars for the purpose of introducing moisture into the gas, claiming that in this way the engine may be made to "burn water". It is a strong indictment of the chemical commonsense of the American people that such advertisements will catch enough suckers, not only to pay for the ads, but produce a profit for the promoters. The high school instructor can do more than any one else to sober up some of the over-credulous by imparting a decent measure of chemical commonsense.

Another group of theories that should be left to the college instructor is the ionization hypothesis, reversible reactions, the mass law, and so forth. I have had students who could talk glibbly about ions and ionic migration, and yet could not see why NaOH and HCl could not exist side by side in the same test tube. Instead of these difficult and rather impractical concepts, such simple principles as neutralization, valence and simple stoicheiometric relations should be ineffaceably impressed on the student mind. I believe that if he had had a different sort of high school instruction, a certain physician in New York state might have escaped the blighting fame that has overtaken him. According to a well authenticated story this physician wrote a prescription for a patient suffering from some digestive trouble, calling for dilute HCl as a specific for a sluggish gastric condition, mixed with milk of magnesia as an emollient for the intestines,—HCl a strong acid and $Mg(OH)_2$ a strong base! The lion and the lamb lying down together according to the scriptural metaphor had nothing on this combination.

When it comes to the metals, develop not only their properties and uses, but their economic aspects as well. Explain why iron ore is mined in the upper peninsula and smelted in Pittsburgh or South Chicago; why Missouri zinc ore is smelted in Danville, Illinois. Contrast the properties of alloys with their component metals, and show the marked changes in such respects as hardness, melting point, tensile strength, and so on.

Omit the Periodic Law. Or at the most, use it simply as a means of classifying the elements. The other year a young teacher asked me which form of the periodic table he should teach his students—the Harkins or the old Mendelieff form. I frankly told him to teach something that the students might be expected to learn.

Sodium hydroxide and sodium carbonate should be studied as to their commercial uses; hard water should be considered as to causes, behavior and treatment; likewise the practical aspects of mortar, cement and dozens of other topics of decided human interest and importance. Towards the end of the course there should be taken up petroleum and its refining products; illuminating and fuel gases; simple cases of practical electrolysis and storage cells; the practical aspects of substances like sugars, alcohols, and related compounds, introducing an elementary study of fermentation and enzyme action.

The laboratory experiments should be chosen with this same purpose of giving the student as much usable information as possible. A small number of simple quantitative experiments should be given, to emphasize important relationships. As a general rule, however, the properties studied should be those which give the substance its practical importance. There should also be included a number of household and shop tests for impurities, adulterations and substitutions in every day commodities.

I am not sure that the usual plan of studying the nonmetals first and the metals last is the proper one. There is no doubt but that the metals are much more familiar to the beginning student, and that their properties and applications are much easier to grasp than in the case of nonmetals. For example, take iron

and chlorine. The student is already familiar with iron and its uses; chlorine on the other hand, he has never seen before, its properties are much harder to understand, and its chemistry is far more difficult.

I am not sure that qualitative analysis deserves any place in the high school course. I should include it only in case lack of laboratory facilities or supplies prevented the class from doing something more important. To the high school student, qualitative analysis is merely a stunt, the details of which are soon forgotten, leaving no abiding impression on his mind except that in some way he effected a separation. Furthermore the portions of the general analytical procedure available for high school work are so fragmentary and unrelated that, even if accurately remembered, they would be worthless in an actual analysis. The only value of such work lies in its disciplinary quality.

The next question is, how well would this course of everyday chemistry fit a student for entrance into college work? I believe very firmly that it would be a vast improvement on the old, and I am going to make so bold as to point out some of the chief defects of the course as it is now all too frequently taught.

In the first place, I think the thing that is most radically wrong with high school chemistry is that it is usually nothing but an under-sized imitation of the Freshman course. This is due to a considerable degree to the fact that the teacher usually tries to teach just as he was taught in college. But another and less excusable reason for this imitation is an attempt to forestall the college course, so as to prevent failures of his students in the college subject. Aside from the questionable ethics of such a plan, the whole scheme works out wrong. It is a well substantiated fact that there is a higher percent of failures among students who have had chemistry in the high schol than among those who have not. Here at Illinois the best lecturers and quiz instructors are assigned to the high school groups with the hope of reducing this high mortality. The trouble is, the student in repeating the work of his high school course imagines that he knows much more than he really does, and hence loafs. A more subtle, but none the less obvious reason is that a student never has the genuine interest in a course that he is repeating that he has in an altogether new subject. I have heard several students say, "I enjoyed my high school chemistry very much, but someway I cannot work up any 'pep' over this Chem. 1a." The reason is plain. It is dreadfully hard to reanimate the corpse of a dead enthusiasm.

Another not infrequent error on the part of young high school instructors is the attempt to squeeze a whole lot of college or university chemistry into their course. I have had students try to talk to me about radioactivity and atomic decomposition—students who did not know the reaction between manganese dioxide and hot hydrochloric acid solution. The other day one of the quiz instructors here at Illinois was tutoring a girl in the room adjoining my office. He asked her to give an example of base. "NaCl", she suggested. "No," said the instructor, "think again." After a moment's hesitation she suggested, "H_2SO_4." "For the love of Mike, stormed the instructor, "what did you study in the high school, any way?" "Oh, lots of things, but we did not have anything about bases." No time to waste on such unimportant things, I presume.

Another kind of perversive instruction in the high school is that given by teachers who try to make their work as interesting as possible by stressing mystic and bizarre effects,—just anything that can be counted on to surprise and to stun the student. The recitation begins with an explosion and ends with a play of colored lights. I was talking not so long ago to a young teacher who said that he thought the mercuric iodide experiment was one of the best in the book. I had to ask for information. "Why," he said, "you add some mercuric chloride solution to some potassium iodide solution, and you get the reddest precipitate you ever saw." "That may be true enough," I conceded. "But what does the experiment teach?" "Why that red color; Isn't that chemistry?" He was the same fellow who set up on his lecture table

samples of all the indicators, methyl red, methyl orange, methyl violet and all the rest of the methyls, and made them first acid, and then alkaline. To be sure he got ample chromatic effects, but I allege that he taught very little chemistry. I hold that such theatrical effects, rather than increasing the effectiveness of the teaching, are actual hindrances. It is a fundamental psychological principle that the sensation of surprise or wonder momentarily paralyzes the mind so that it is incapable of thought. There are times when stunning experiments are in order, as when you wish to fix the student's attention on a definite and easily understood reaction, as the explosiveness of hydrogen-oxygen mixtures, but when performed simply for the sake of the element of surprise or shock produced, they put the student in exactly the wrong attitude toward his subject. Explosions and bizarre effects are strictly outlawed in plant practice, and the man who produces them is a menace, and is apt to lose his job. The time is gone forever when chemistry is to be looked on as a sort of black art, inscrutible and mysterious; and the teacher who does not do all in his power to free it from such implications does not understand the spirit of the day.

This unfortunate zeal of the young teacher to make his course entertaining may operate in another way. He may use all sorts of expedients to sustain interest, such as having his class attend popular addresses, and the so-called "educational" moving pictures, and make frequent excursions to industrial plants. I want to be careful just what I say along this line, for I do not want to be misunderstood. While a limited number of diversions like these may be of value, extraordinary pains must be taken to make them yield the profit expected. So far as a popular address is concerned, it is seldom as valuable as ten minutes of actual study. And as to the moving pictures, what is the actual value of a film on the manufacture of lead pencils or the fabrication of Limburger cheese? A visit to an industrial plant may be made very profitable, provided the student has beforehand a very satisfactory knowledge of the principles involved, so that he may grasp the real significance of the physical processes which he sees in operation. The fundamental danger of this whole plan is that it fosters in the student a passive attitude of mind and superficiality of information. He never learns to do any constructive thinking, and his mind becomes flabby and his initiative dead. In chemistry as elsewhere, nothing worth while is ever obtained except by real, purposeful effort on the part of the student, and the entertainment method does not include that. A high school chemistry course that does not make the boys and girls work—yes, and make some of them fail—is not worth much.

By way of conclusion, let me return to the subject of this paper, "How can we best train students for college chemistry?" I answer by the epigram, "By training them for something else, namely: for living in sympathetic relationship to modern life." If we can only bring our boys and girls to understand the every-day applications of chemistry, they will know enough to have no trouble about entrance credits in chemistry. The problem is merely to establish a new point of view, one that will make us realize that chemistry is no longer a mystic art, but a practical agency which, aided by a sympathetic understanding on the part of the masses of the people, will bring us enlarged prosperity and a better civilization. I want to suggest a book which I think is a wonder at bringing people to see chemistry in its new role. I have in mind Slosson's "Creative Chemistry", which I referred to above. In the last chapter Dr. Slosson gives a splendid list of references—all of them books which bear out the theme of this paper, "Chemistry as a Means of Co-ordinating life with a Scientific Age."

Laboratory Resourcefulness in the Smaller High School

Miss C. Isabel Fogarty, Stonington

Psychologists tell us that the laboratory work of science has a better opportunity than any subject to bring out in a student, after he has assimilated facts, the power to discover the relations existing between these facts. We who are the teachers of Chemistry in the smaller high schools have seen this principle proved repeatedly when because of lack of equipment a student has been compelled first to construct his own apparatus and then with the interest inspired by creation to find out, as he himself might say "what his work is good for". While we are lamenting the lack of funds alloted to us for fitting up the chemical laboratory we realize that the serious student is being undeniably benefited in that before he begins to perform a certain experiment he has the advantage of knowing from his own experience all the whys and wherefores of the workings of the apparatus which he is about to use. Then when we are ready to perform the experiment itself, we find him filled with an interest somewhat akin to that which possesses the inventor who, before he can produce the idea of his mind must construct the machine whereby the thought may find material expression.

Ideally this may do very well but when we find ourselves confronted by the average high school chemistry class of twenty or twenty-five boys and girls we feel the need of a laboratory equipped with at least a fair amount of apparatus and I think we all agree that the sum set aside for that purpose by the Board of Education is never quite sufficient. However since there is some way out of every difficulty I shall try to show you what I believe to be a way out of this one.

If the more simple pieces of apparatus be made by the class then it will be possible to buy more complicated, necessary pieces which are often thought to be out of reach for the small high school laboratory. Among the first lessons in the laboratory might be the one on the Bunsen burner and at the same time the student might, with very little difficulty construct a burner which will make a very good substitute for the more expensive one which would be purchased from the supply company. Such a burner has been satisfactorily made from a piece of iron pipe about five inches long and one half inch in diameter with a hole one-fourth inch in diameter bored through the pipe about an inch and a half from one end, a strip of tin one half inch wide and two inches long, a block of wood three inches square and one inch thick, and two strips of wood each three inches long, one inch wide and one inch thick. The pipe is fitted into a hole in the center of the block of wood, the piece of tin wrapped so that it will slide snugly on the pipe(this serves as the air regulator) and the strips of wood are fastened to the block in order to raise it so that the rubber hose may be attached to the end of the pipe beneath the wooden base.

Useful test tube racks may be made from annealed iron wire, the only tool needed being a pair of pliers.

A piece of the same kind of wire as that used for the test tube rack and a one-inch square piece of sheet iron will make a fairly good deflagrating spoon. The sheet iron is made into a small pan by cutting the corners and folding into shape. If a hole is drilled into one end of a piece of wire about eighteen inches long the bowl of the spoon can be fastened to the handle by means of a screw and nut.

Some very heavy iron wire or better still some iron rod will do to make a ring stand. The support is merely one end of the rod fashioned into a ring or rectangle and the rings of various diameters are made from some lighter rod or wire one end of which can be wrapped around the support.

Still another very necessary piece of apparatus which can be made from wire is a test tube holder. A piece of spring brass wire about twelve inches long is needed for this. The wire is first bent around a rod about half an inch

thick to form a double circle in the center of the wire. Then the wires are shaped like a hairpin as far as the center where they cross, spread slightly and are curved at the end to fit a test tube.

In electrochemistry usable dry cells are made by taking apart old dry cells and using their zinc containers and carbon sticks with a new pasty mixture of chemicals. These cells may be weaker than new ones but they are usually strong enough to fill our need. Likewise a good wet cell can be made in an eight ounce bottle with a cupful of water, a teaspoonful of potassium bichromate and a tablespoonful of sulphuric acid. Carbon and zinc rods with wires attached complete the cell.

A simple electrolysis apparatus is made from a couple of test tubes and carbon rods, a shallow dish or pan some dry cells, (homemade ones will do) or the electric current may be furnished by the storage battery from an automobile. The use of a storage battery from a Ford for the electrolysis of water aroused interest in one member of my present class because she had never thought of the Ford which she drove to school every day in connection with her chemistry and was quite surprised to find an existing relation.

Such inexpensive material as a meter stick, a hand balance, a sponge, a few pieces of coal and some salt or other hygroscropic substance will make an apparatus which will illustrate very clearly the workings of the barometer. The sponge saturated with a concentrated water solution of the moisture-absorbing substance is placed upon one pan of the balance and balanced by means of the pieces of coal on the other pan. The meter stick is set up and the reading taken while the sponge is completely saturated. After all the moisture has been driven off the reading is again taken, a corresponding scale made and the barometer is ready for use.

The Liebig condenser can be dispensed with after the principle of distillation of liquids has been explained to the class as each student thrown upon his own resources will manufacture some kind of a condenser for his own use.

It seems to me that the project method can be of great assistance in the solution of this difficulty. Take for example the Soap Making Project. All of the work on this project can be done at home or at least away from the school while a project on the Softening of Hard Waters might be assigned to students who would have access to a nearby laundry.

The acetylene generator, the gasoline engine, the purification of the water supply for the town, or perhaps a neighboring coal mine might each play a practical part in the student's laboratory chemistry course. After all must we confine the laboratory to the school building? If we are to make the chemistry course worth while to the student whose study of chemistry will end with his final examination in his high school course in that subject, as well as to the student for whom the course is a preparation for college, must we not bring his chemistry into his everyday life in order to make it of real value to him?

Teaching the Fundamental Quantitative Principles of Elementary Chemistry

Professor H. W. Adams, Normal

The half centry beginning with 1770 was the time when the foundations of modern chemistry were laid. During these years there appeared those principles of a quantitative nature which lie at the basis of chemistry as an exact science.

Lavoisier, 1770, using a balance, began work on the nature of combustion which led to the law of conservation of matter. In 1792 appeared Richter's law of combining weights. But because Richter's mind was confused with the phlogiston theory, it was necessary that the law be announced anew later by Proust, Dalton and Berzelius. Proust, 1799, began his famous controversy with

Berthollet which resulted in the triumph of the former's idea of constant composition of pure compounds, and so the law of constant composition appeared. At about the same time Dalton announced the law of multiple proportion and in the first years of the new century stated his atomic theory, publishing the first table of atomic weights in 1805. This was revised in 1808.

Gay-Lussac, 1805, announced his law of combining volumes of gases and thus placed in the hands of investigators a valuable means of determining combining weights. Berzelius, 1807, began his brilliant career developing Dalton's atomic theory, determining atomic weights, and laying the foundations of analytical chemistry. Berzelius also devised the system of chemical nomenclature and notation universally used today.

Avogadro, 1811, announced his famous assumption regarding the relative number of molecules of gas in equal volumes. In 1815 Prout's hypothesis appeared to be rejected by chemists for a century until in a new setting it again commands attention. Dulong and Petit, 1819, proposed their law of atomic heats so useful in atomic weight determinations.

The mere cataloging of these discoveries of this half century is enough to convince one of the wonderful work started at that time. As teachers of elementary chemistry we may well ask ourselves: "What is our responsibility toward our students regarding instruction in these matters fundamental to chemical science?"

It is the opinion of the writer that present day instruction in high school chemistry is dwelling more on the descriptive phases of the science while the fundamental principles mentioned above receive relatively less attention than they did ten or fifteen years ago. If this belief is well founded then we may ask ourselves whether these fundamentals may be neglected without srious injury.

In the first place let it be clearly understood that it is not expected that the student of elementary chemistry, whether high school or college, shall attempt to re-discover the laws of chemical combination. The most he can do is to get a clear understanding of their meaning and their relation to the science. Nor are the laws as we have them to be considered the ultimate attainable knowledge of chemical combination, but rather statements of the present day knowledge of such behavior.

Landolt spent a great deal of time on his critical study of the law of conservation of matter and was able to verify it to the extent of an error of 1 part in 10,000,000. Stas, Richards and Morley have done extensive critical work on the law of constant composition, the last named worker spending the best years of his life on the task. Surely we cannot expect our students to reproduce their work, yet the elementary student need not go through his first course in chemistry without actually understanding the formation of a compound and determining its composition with a reasonable degree of accuracy. The elements iron and sulfur, both colored solids, lend themselves admirably to a quantitative synthesis of a compound, ferrous sulfid, and the student should not be denied the experience. The aim is not to prove either the law of conversation of matter, nor yet the law of definite composition, but rather, to acquaint the student with the methods of a quantitative synthesis. If lack of equipment makes it impossible for each student to do the work individually or in pairs, it may be carried out as a class exercise by the teacher.

A porcelain crucible and lid are weighed to milligrams if possible, otherwise to centigrams. Then about 500 milligrams of clear, powdered iron are placed in the crucible and the crucible and contents are again weighed. Next an excess of sulfur is placed in the crucible with the iron and, without again weighing, the mixture is heated in the covered crucible thereby permitting the iron and sulfur to unite forming ferrous sulfid while the excess sulfur is volatilized from the crucible, still covered, by increasing the heat to the best temperature attainable with the Bunsen flame. After cooling and weighing the crucible and contents, they are again strongly heated and weighed to see that

constant weight has been reached. At this point the weight of iron used, of ferrous sulfid formed, and of sulfur consumed are calculated as well as the percentage of each element present in the compound. Such exercises clearly reveal to the student some of the methods of quantitative chemistry, as well as teach him the method of finding the composition of a compound.

Other compounds than ferrous sulfid may be synthesized from their elements by the teacher without consuming an undue amount of time, and yet at the same time giving the student a clearer insight into the quantitative nature of chemical reaction. The well known experiment of burning, in air, a weighed quantity of magnesium, producing magnesium oxid, needs but be mentioned. Possible less frequently used are the methods of converting a weighed amount of tin into the dioxid by means of nitric acid, subsequently heating strongly to dehydrate the metastannic acid. This leaves the dioxid. Still another method is that of causing a weighed quantity of copper to react with nitric acid thus forming the nitrate, which after evaporation to dryness on a water bath is converted into the oxid by careful heating. This exercise may be carried out in a 250 cc Pyrex beaker. In each case students should calculate the weights of metal and oxygen combining and the percentage composition of the compounds.

Out of these experiments arises a use quite exceeding that of determining the composition of the compounds, namely, the calculation of the equivalent weight of the elements magnesium, copper and tin taking 8 grams of oxygen as the basis. These oxides may be supplemented by others not determined experimentally but given by the teacher, in each case the percentage composition of the compound being given. In this connection other equivalents are determined by the method of evolving hydrogen from acid solutions using, perhaps, zinc, magnesium and aluminum. These methods are too well known to require description here.

Thus far the work should impress the student with the idea that chemical elements are not equivalent to each other gram for gram and pound for pound, but rather, that each element has its individual equivalent weight with which it enters into chemical compounds. If the teacher has chosen a great enough variety of compounds whose percentage compositions are known it will appear that some elements have two equivalent weights.

Now two very important matters present themselves, one the law of multiple proportion, the other the determination of the atomic weight of the element from the equivalent weight. May the law of multirple proportion be considered first? Many teachers seem to think that formulas are necessary in order to teach the law of multiple proportion. Such is not the case, in fact the use of formulas may lead to an utter misunderstanding of the law. Suppose the list of oxids included those of sulfur, the dioxid and the trioxid. The first is composed of 50% sulfur and 50% oxygen, while the other has 40% sulfur and 60% oxygen. How may these two compounds together be used to illustrate the law of multiple proportion? In the first it will be observed that there is one part each of sulfur and of oxygen, while the second has 1.5 parts of oxygen for one part of sulfur. Hence, the sulfur being the fixed weight the varying weights of oxygen uniting with this fixed weight of sulfur in the two compounds stand to each other as 2 and 3 respectively. Or again oxygen may be the fixed weight in the two compounds, 1.5 in each case. The varying weights of sulfur will stand to each other as 3 and 2 respectively. Similar illustrations using the two oxids of carbon, the two commoner oxids of phosphorus, the oxids of nitrogen and the hydrids of carbon will immediately present themselves to the resourceful teacher.

The second important matter alluded to above, the derivation of atomic weights, may now be considered. Many times when a student wants to know the origin of atomic weights he is put off with the answer that this matter will be presented in due time, and when the time arrives his interest has lagged

and the atomic weight determination makes but little impression. The student should understand that atomic weights and equivalent weights are both kinds of combining weights and that the law of combining weights applies to each. In the second place the student should understand that atomic weights are "at least as good for representing combining weights as equivalent weights, and lastly, that atomic weights are a better kind of combining weight than equivalent weights" to use the words of that dean of American teachers of chemistry, Professor Alexander Smith. Atomic weights are better than equivalent weights because each element has but one atomic weight, while it may have two or more equivalent weights; and furthermore the atomic heats of the elements point to the atomic weight as a true number of nature.

This is where the Dulong-Petit rule finds its use in teaching elementary chemistry. This will tell us whether the equivalent weight of the element is also the atomic weight or whether the atomic weight needs to be multiplied by 2, 3 or 4 in order to obtain the atomic weight. Of course no one claims that the Dulong-Petit rule will give accurate atomic weights but the value will be near enough to serve as a guide in calculating the atomic weight from the equivalent weight.

With atomic weights rendered more or less intelligible, the way is now open to return to the compounds synthesized, the ferrous sulfid, and the tin, copper and sulfur oxids, and teach the derivation of formulas. The student should understand that this matchless invention of Berzelius, the chemical formula, is a device to help him grasp, quickly, the knowledge of the composition of a compound. The formula does not obscure, rather it makes meaning clear.

The derivation of a formula should not be a mechanical matter. The student should understand that he is shifting the expression of the composition of a compound from a percentage basis, i. e., parts per hundred, to an atomic weight basis. That is to say: In 63.52 parts of iron found in 100 parts of ferrous sulfid there are as many atomic weights of iron as 63.52 contains 55.84, the atomic weight of iron; while in 36.47 parts of surfur, also found in 100 parts of ferrous sulfid, there are as many atomic weights of sulfur as 36.47 contains 32, the atomic weight of sulfur. The resulting quotients, then, represent the relative numbers of atomic weights of iron and of sulfur, which is a ratio of I:I. Time should be taken right here to impress this matter, for while the ratio of iron to surfur in the compound is as 63.52 to 36.47, respectively, or about 1.8 times as much iron as sulfur, yet because of the difference in atomic weights of the elements, the atomic weight ratio is as 1:1.

Next comes teaching how to represent one atomic weight of iron by the symbol, Fe, which means 55.84 parts, by weight, of iron; also the representation of the atomic weight of sulfur by the symbol, S, meaning 32 parts by weight of that element; and finally, the formuls, FeS, which means that 55.84 parts of iron and 32 parts of sulfur have united in making 87.84 parts of ferrous sulfid.

Students are prone to misinterpret formulas. Their prime purpose is to represent the composition of compounds, and if the student is permitted to fall into the habit of saying that FeS means a compound having equal parts of iron and sulfur, then the formula has quite failed to convey the information it is intended to carry. Yet when one considers the scant attention given in some high school texts in chemistry to the development of the formula it is no wonder that the student has no true notion of either its origin or its meaning.

The formula, FeS, does not represent a molecule of the compound. The same is true of the formulas CuO, SnO_2, MgO, H_2O, and many others that might be mentioned. They do, however, represent, each, a formula weight of the compound. Nor does FeS tell us that one atom of iron has combined with one atom of sulfur. It merely represents that the ratio of the atomic combinations is as I:I. Similarly for the other compounds mentioned.

Nor does the formula H_2O tell us that water is composed of two volumes of hydrogen and one volume of oxygen. In fact, water is not composed of two gases at all, but rather of two elements, hydrogen and oxygen, and when water is decomposed and the elements set free they assume the gaseous state having volumes of 2 and 1 respectively. The time honored experiment of electrolyzing diluted sulfuric acid gives information of a qualitative nature only unless the weights of the evolved gases are determined. It has long been the writer's opinion that this overworked experiment is responsible for more misinformation about the composition of water than is the text book or the teacher.

In the case of the two formulas, H_2O and H_2O_2 students are likely to say that hydrogen peroxid contains twice as much oxygen as water and that the two formulas, taken together, illustrate the law of multiple proportion. As a matter of fact the two formulas show that the fraction of oxygen in each compound is nearly the same, being 16/18 in the case of water and 16/17 in the case of hydrogen peroxid, while the fraction of hydrogen in the first, 2/18, is a little less than twice that contained in the second.

The gas volume law of Gay-Lussac should next be presented. This law points out the small integer ratio of reacting volumes of gases. The often used teacher experiment is that of filling a tube with dry hydrogen chlorid gas after which the gas is caused to react with sodium forming hydrogen and sodium chlorid. The volume of the hydrogen is then measured. The experiment teaches that one volume of hydrogen chlorid produces a half volume of hydrogen, but tells nothing about the volume of chlorin had it, too, been set free. There is no justification for obtaining the chlorin volume by subtracting the hydrogen volume from the hydrogen chlorid volume. Neither is there justification for saying that hydrogen chlorid is composed of one volume each of hydrogen and chlorin. Neither is ammonia composed of one volume of nitrogen and three volumes of hydrogen for each two volumes of the gas taken. There is no such thing as the volumetric composition of a gas or any other kind of compound, and the sooner our students can learn that the composition of a compound is always expressed gravimetrically the less confusion there will be.

But the law of Gay-Lussac has its proper use as in the relative volumes of oxygen and carbon dioxid involved in the combustion of carbon, and again in the relative volumes of carbon dioxid and carbon monoxid involved in the reduction of the former by carbon. These examples have important bearing on the combustion of fuels which the teacher will not overlook.

Another quantitative fundamental of elementary chemistry is the molecular weight determinations. The use of the so-called vapor density method will suffice for the beginner's course. Here use is made of Avogadro's law, this generalization being at the basis of molecular weight determinations by this method. The student should be led to see that the standard of molecular weight determinations is 32 grams of oxygen. Here is the reason for the experiment "Determination of the Weight of a Liter of Oxygen". The manipulation of this exercise requires no comment here. But having determined the weight of a liter of oxygen under standard conditions why not determine the gram molecular volume as well? The student may be led to reason thus: If 32 grams of oxygen is the standard of molecular weights, then 32 grams of oxygen will occupy 32/1.429 or 22.4 liters at standard conditions. Then, by Avogadro's law, 22.4 liters of any other gas will contain as many molecules as does this volume of oxygen. The determination of the molecular weight of a gaseous substance, or one that can be gasified, resolves itself into determination of the weight of one liter then of 22.4 liters of the gas. It is a good exercise for the student to calculate the molecular weight of many gases obtaining the weight of a liter of the gas from reference tables.

In the estimation of the writer we have now completed the catalog of the fundamental quantitative principles and operations of elementary chemistry. To enumerate them again, they include the laws of chemical combination, viz: conservation of matter, constant composition, multiple proportion and combining weight, all of which are gravimetric laws, together with Gay-Lussac's law, a volumetric law, Avogadro's law and the Dulong and Petit rule, while the fundamental operations include the quantitative analysis or synthesis of a compound, the determination of equivalent, atomic and molecular weights, and the derivation of emperical and molecular formulas. These matters were, and are, important in the development of chemical science and may also be considered essentials to the understanding of chemistry on the part of the student. These principles and operations, because of the peculiar nature of chemical instruction, cannot be taught in one unbroken series of lessons, but the teacher must have the whole plan well organized in his own mind and he must see clearly how to proceed to its execution. Moreover he should know how to find out whether his pupils have grasped the content. Such tasks command the best there is in us. Skill is required. The task is not easy. But, nevertheless, we cannot shirk it and be true to our science and our pupils.

An Evaluation of Standard Tests

H. L. Camp

Before attempting to discuss this subject let us agree on a few tentative definitions of terms. The term "standard tests" is often used rather loosely to include various tests for which in some cases no norms or standards have been established. Standard tests are generally supposed to have been scientifically devised but in some instances about the only evidence of science is that they have been printed. Some so-called standard tests are not worth the paper they are printed upon. But in the more restricted sense of the term "standard tests" are somewhat scientifically devised, are objectives, and are designed to measure some characteristic, trait, or stage of achievement. By "objective" we mean such a test as can be scored, by any ordinary person of normal intelligence, without being influenced by the scorer or his personal knowledge of the individual who did the test. This means that the answers to the items included in the test are very definite and exact and not depending upon the judgment or any of the subjective elements of the one doing the scoring. It has been shown by different investigations that the customary class-room examination paper will be given a wide variety of scores (or grades), when scored by a number of different teachers. *Kelly reports that marks assigned by 116 teachers ranged from 28 to 92. Furthermore, it has been shown that the same teacher scoring a set of papers on several different days will vary as much as 30% on the scores allowed to a given paper. Now if the test is objective this difficulty will be eliminated.

During the past ten years nearly every school administrator has enjoyed to some extent the the fad of giving tests. Some tests are interesting and working on them is instructive and a good mental exercise for the individual. But too many times tests have been given and afterwards never even scored. Or if they are scored there is no use made of the results. The person giving the tests knew nothing about tests but wanted to be in vogue. He gave tests because others were doing it. Not so long ago it was quite the thing to have appendicitis but now glands are in vogue. Nowadays few people have their appendixes removed unless there is need for such an operation. We believe that in the near future we shall give tests only when there is a need for them and when we have a real purpose in giving them.

*F. J. Kelly, *"Teachers Marks"*.

What are the purposes for giving tests? Of what value are standard tests or scales? The value of any test is directly proportional to its usefulness. We may use one or more tests to aid us in classifying pupils either in the high school or in the elementary school and group them in sections A, B, and C:—below average, average, and above average. In so doing we are able to provide for the bright boy or girl a much fuller treatment of subject matter, a much broader and richer experience, and so enable him or her to become a capable leader. We can also do better by those pupils below average by spending time only on the minimum essentials and giving simpler and more satisfactory explanations. Or, if it is not practicable to make two or more sections we may give tests in order to find out what is the extent or spread of individual differences in a given group and so be able to teach the group more satisfactorily. For without such information concerning a class the teacher will teach the bright pupils and go too fast for the slow ones, or he will explain fully and carefully for the slow pupils and make the class too slow and uninteresting for the bright.

Again, it is often worth while to give tests in order to compare one city system of schools with another, or others, or to compare schools in the same system, or to compare classes in the same building. This may be justified for either of two reasons: diagnosis or publicity.

We may be able to get definite information as to status then follow it up by further testing to discover the causes. These causes may be due to the degree of intelligence of pupils or environmental circumstances of home-life; they may be due to poor selection of subject matter or an improper emphasis on the various phases of the course of study; or they may be due to some deficiency in the physical conditions of the school plant and equipment; or *even* to lack of efficient teaching.

Publicity is one of the most important phases of school activity. It is essential that the public know the existing conditions and needs. To bring this about every one connected with the school should be pressed into service,—boards, administrators, principals, supervisors, teachers, pupils, janitors, and even visitors. The results of testing may prove very valuable to stimulate public opinion by showing the needs in definite form.

Probably the most important service that can be obtained from the use of tests is provided through experimentation. There are many problems that should be answered which require accurate measurement. Tests may be used in discovering the best methods of teaching, including: presentation of subject matter, repetition of drill with increasing intervals of time, and the other various types of pupil-activity within the class-exercise.

Again, we need to know the best order of studying the different parts of a given course of study. We need to know the best size of class for the maximum efficiency. We should know how much time is needed for any given course.

There are other good reasons for the use of standard tests. For example, they can be used in rating teachers, to stimulate effort on the part of teacher and pupils, to convince pupils of the need for drill, and to establish standards of achievement.

But in order to be effective in solving these problems the "standard tests" used must be *satisfactory* "standard tests". Let us consider briefly some of the more important criteria which a good test should meet in order to be satisfactory.

In the first place what does the test measure? Does the test really measure what we want to measure or does it measure some small portion of what we want? It is necessary to consider this point very carefully for, *actually*, tests may not measure what they were designed to measure. Any test measures only the ability to do that particular test. Of course this is indicative of ability to do similar things. This may involve many other items in addition to the thing

we want to measure. For example, to do the majority of tests it is necessary to be able to read, comprehend, write, etc. In such cases we can only hope that part of the work required in the said test does measure a part of the ability we wish to measure. Therefore it is important that this item be carefully considered.

Another important question is that of the reliability of the test. When testing a given group several times will we get the same score for the group? Are there equivalent forms? Will the different forms of the test prove to be equivalent and show the same results?

Again, is the test objective? Will the score obtained in the test be the same regardless of who does the scoring? Can several persons score a given paper and each of them assign the same score?

To fulfill this requirement it is necessary that there be an answer sheet giving the correct answer to each question. The answers must be definite and not depend upon the attitude or mood of the one who scores the paper. Furthermore the score assigned to the paper should be independent of any personal knowledge of the individual who wrote the paper.

Another important consideration is that of administration of the tests. How much time is required to give the tests and is the plan of giving the tests satisfactory to the existing conditions? Is the scoring of the tests comparatively easy and simple or is it a considerable task? Can the scoring be done by the average teacher or is it too technical and otherwise difficult? And will the results of the testing be easily made available in usable form?

Are the tests interesting to the individuals who are to take them? Is the actual work involved a good mental exercise, conducive to mental development, and a good expenditure of time?

Again, will the cost of the tests and the administration of them be excessive or reasonable? We cannot expect to find any test which meets all these criteria in an ideal way. However, in selecting tests or scales we should consider them carefully concerning the satisfying of these six items:

(1) Does the test measure what we want measured?
(2) Is it reliable?
(3) Is it objective?
(4) Can it be easily administered?
(5) Is it interesting and not a waste of pupils time?
(6) Is the cost reasonable?

But do all these considerations have anything for the teachers of physics? Yes, very decidedly so. There is perhaps no other subject which offers more problems for solution than that of high school physics and to solve these problems we can use standard tests very advantageously. Many schools do not have classes in physics which are large enough to be classified and divided into groups of comparatively equal ability but we might well use tests to find out the extent of individual differences.

It would be well to include in such testing enough of a variety to get a thorough diagnosis of the members of any group. We may find some who cannot read understandingly and perhaps a greater number who do not know how to read problems. Some will not be able to do the four fundamentals of arithmetic well enough to do physics problems. The teacher should know the status quo of each member of the class. It is hardly necessary to say that knowledge of the facts should be followed up by remedial work.

But perhaps the most important use of tests in the field of physics teaching is for experimental purposes. We need them in order to carry on investigations in regard to the best methods of presenting the subject matter. With the present methods there is no doubt that the customary course of study includes too much for a year course.

Should most of the time for recitations be used for questioning or should a good deal of the time be used for teaching? What portion of the time should be used for lectures and for demonstrations? How much time should be used for working problems in class? From the standpoint of efficiency is it justifiable to spend 4/7 of the time in doing laboratory experiments? Which method of handling the laboratory work is best? These are a few of the problems having to do with methods and the distribution of time.

We also need to determine the most satisfactory arrangement of subject matter and in what order the various elements of the course should be pursued. Upon which phases of the physics course should the emphasis be put. And what elements of subject matter should the course of study include? Is it advisable to have separate classes for girls and boys?

Also, we need to establish standards of achievement, those standards which should be reached as well as those that are being reached.

Of course we have our own personal opinions as to the answers to a number of these problems but what evidence have we to support such opinions? Perhaps scientific investigation would prove that such opinions are quite wrong. At any rate, they need to be supported by such evidence before we put too much confidence in them.

At present there are few, if any, satisfactory tests or scales for physics. We need more and better ones. [1]Chapman's tests in Electricity and Magnetism, and in Sound and Light partly meet the requirements for being satisfactory. And also the „Iowa Physics Scales for Mechanics, for Heat, and for Electricity and Magnetism are now available at small cost.

One of the first problems which faces any one who would design a test for physics is a determination of the chief aims. We do not want to test on things which were never taught or considered to be aims or goals of achievement.

A careful investigation of the courses of study offered by North Central High Schools to discover the aims of science teaching has been made. Another study shows the aims of science teaching according to the composite personal judgments of more than one hundred science teachers. Combining the results of these two investigations we find the first five important aims in the order of their importance to be as follows:

1. To give knowledge of natural phenomena.
2. To serve as guide for daily life.
3. To give scientific attitude.
4. To prepare for college entrance.
5. To give familiarity with subject matter.

In designing the Iowa Physics Scales the first two of these were considered [3]to be the aims for teaching physics.

We have considered briefly the more important uses of "standard tests", namely:

1. For purposes of classification.
2. To determine extent of individual differences.
3. To make comparisons, either for the purpose of diagnosis or to aid in publicity work.

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1 J. C. Chapman, Yale University, New Haven, Conn.
2 Extension Division State University of Iowa, Iowa City, Iowa.
3 See Scales for Measuring Results of Physics Teaching, University of Iowa Studies in Education Volume 2, Number 2. Iowa City, Iowa.

4. For experimentation:
   (a) To improve the methods of teaching.
   (b) To determine best order of subject matter.
   (c) To find size of classes for efficiency.
5. For rating teachers.
6. To stimulate effort on part of teacher and pupils.
7. To convince teacher and pupils of need for drill.
8. To establish standards.

And the following criteria have been suggested for careful consideration in selecting a *satisfactory* "standard test":

1. What the test measures.
2. Its reliability.
3. Whether or not it is objective.
4. Ease of administration.
5. Interest and worth to pupils.
6. Cost.

A number of problems in the field of physics teaching have been mentioned as needing the assistance rendered by *satisfactory* "standard tests." Let us each contribute something toward improving the teaching of this subject. It is too important to be allowed to be shunned by so many of our high school pupils and ultimately to be dropped from the course of study. Is it worth the effort? Shall we begin immediately, this year?

A regular lesson was taught to the Physics Class of the University High School by J. A. Smith, University High School and observed by members of the Physics Section of the Conference.

The class consisted of sixteen members, who had had three days' work in the Laboratory and one recitation on the subject of machines.

The lesson consisted of a short review and summary of the machines studied and then the attempt was made to acquaint the pupils with the meaning of power, the units of power and the kinds and measure of energy, which comprised the new material of the lesson.

17. SOCIAL SCIENCE SECTION

The Social Science Section was called to order at 9 o'clock November 24 in Trinity Church, Mr. I. O. Foster of the University High School presiding in the absence of Mr. U. S. Parker of Quincy.

Since this Section adjourned in 1921 without electing officers for the next year, a short business session was held. Prof. J. G. Randall of the University was unanimously elected Secretary.

Prof. Jones of the University made a motion that the program committee be increased by the addition of two members who would serve for one year. The motion was carried and Mr. Bush of Joliet, Miss Ullrick of New Trier Township High School, Kenilworth, and Miss Hull of Decatur were nominated. Mr. Flanigam of Urbana suggested that in view of the amount of work to be done by this committee, the original motion be amended to include three new members.

This suggestion met with the approval of the members and Mr. Bush, Miss Ullrick and Miss Hull were declared unanimously elected.

A short discussion of the work of this committee followed. Prof. Jones spoke of the difficulties encountered because of changes in positions and addresses of the members. He asked that such changes be reported and also made a plea for prompter answers to the letters sent out by the committee asking for suggestions for making a helpful program.

The first paper of this session was given by Miss B. L. Ashton of the Department of Geography, University, speaking on the topic "Geography in the Interpretation of History."

Miss Ashton spoke of the intimate relation of Geography and History and gave a well selected list of books and authorities on geographical influences in the histories of America, England, European countries and the Ancient world. The works of Turner were mentioned especially because of the attention paid by this historian to the part played by geography in the history under discussion.

In proof of her statements the speaker gave some examples of geographical influences in history, as the situation of Portugal, which was favorable to the discovery of a new route to the Orient; the insular position of Britain which lead to her supremacy upon the sea, etc.

Continuing her discussion, Miss Ashton reviewed the influence of river systems, using as one example the rivers of the South which aided in the growth of the plantation system.

The speaker further illustrated her contention that geography is closely related to history by speaking of mountains and by pointing out the strategic importance of certain mountains in well known battles of the Civil War.

Climate, Miss Ashton said, was very important because of the influence it exerted upon man. To prove this fact the national characteristics of the Mexicans were contrasted with those of the Scotch and the Scandinavians.

Miss Ashton mentioned some maps that she thot might be usable in the class room, especially the topographical maps of the United States Geological Survey Department and a map published by the University of Wisconsin Press, Madison, Wisconsin.

The discussion of Miss Ashton's paper was lead by Miss Verna Cooley of Champaign reading a paper for Miss Ethel J. May of the same school.

Miss Cooley stated that the student's knowledge of geography could be checked advantageously the first few days of school. A map drill conducted for fifteen minutes during the first two or three weeks of school would aid in the work to follow.

Miss Cooley spoke of the necessity of having good maps and especially recommended black-board maps. Also, the speaker stated that she preferred the map manuals rather than the loose leaf maps. In her own classes, map work is taken care of in the class-room as laboratory periods.

Miss Cole, substituting for Miss Ulrick of the New Trier Township High School, followed Miss Cooley. Miss Cole spoke of the law of association as shown in the related subjects, Geography and History. The speaker told something of the influence of wall maps and the knowledge unconsciously assimilated by the students as they watch the teacher's pointer move over boundary lines and locate rivers and harbors.

The second paper of the morning was given by Mr. C. A. Harper of the University, who discussed the subject, "Problems in Democracy, as a Course for Seniors."

Mr. Harper stated that the Social Science Curriculum had been of slow growth and perhaps the time had come when a change was needed. The speaker stated that it was possible to spend too much time on the history of America up to the Reconstruction Period and not devote enough time to the teaching of appreciation of the great problems of the present day.

Mr. Harper by careful investigation, using magazines, questions put to graduate students, business men, etc., attempted to discover what present day problems were considered the most vital. From these sources the speaker decided upon ten problems such as those relating to Capital and Labor, Child Labor, Inter-State Commerce, etc., as the ones to be taught in the American History classes. Mr. Harper was not in favor of using a text-book for this work, his chief reason being the fact that it tended to prevent independent thinking on the part of the students.

Mr. Glick of Urbana lead in the discussion of Mr. Harper's paper. Mr. Glick thot that the courses in Ancient and Medieval History might be shortened in order to allow more time for work in Democracy. The speaker emphasized the need of tact and diplomacy on the part of the teacher who presented these problems effectively.

Mr. W. E. Kettlekamp of Ottawa discussed the same topic, giving some statistics secured by use of a questionnaire sent to the larger high schools of the State.

Seven high schools reported that they did not have courses in Democracy. Four out of the seven replied that such a course should be introduced. Several schools replied that Civics and Economics had been combined into one course and others that they had a combination of Sociology and Economics. The speaker read replies from several schools to show the trend of thot along this line. Mr. Ket-

tlekamp also spoke of the need of proper library facilities for use in these different fields.

"The Handling of Backward Students in the Social Sciences" was the subject of the paper presented by Miss E. Grace Bridges of Decatur.

Miss Bridges spoke of the effort made in the Decatur High School to provide for the retarded students. Those students showing little or no ability are taken out of the regular classes and placed in special classes. In these classes the hour is divided into one period for study and one for recitation. The socialized recitation is used effectively. A recent example was an election conducted along the same lines as a regular election. The retarded students learned how to use a ballot, discussed political parties and candidates, and used their knowledge on election day with about as such skill as the students in the regular classes.

Miss Bridges spoke of the good results obtained by forming the classes into a "Better Citizens Club."

Mr. R. M. Cook of Herrick opened the discussion on Miss Bridges' paper. Mr. Cook emphasized the need of knowing the students and appreciating their interests.

Mr. R. G. Browne of Marion spoke of the value of the conference hour. Mr. Browne stated that the conference hour should receive as careful consideration as the recitation. The teacher should find the reasons for a student's failure and be able to suggest a remedy. In the Marion High School two cards are filled out for each unsatisfactory student showing the cause for poor work and the suggested methods for improvement. The student is given one card to take home and the teacher keeps the other.

In the short discussion that followed the chairman spoke of the possibilities in study halls for English, History, etc., with teachers in charge who were interested in these subjects. Students would be assigned to the study hall of the subject in which they were inferior.

Mr. D. P. Flemming of Monmouth College opened the afternoon session reading a paper on "The Reorganization of the Social Science Curriculum".

The greater part of Mr. Flemming's paper was taken up with a discussion of the report of the "Commission of the Association of Collegiate Schools of Business". This commission reported that instruction in the social sciences should begin in the seventh grade, and gave an outline of the plan to be used in both the Junior and Senior High Schools.

In the investigations carried on by the commission it was found that one-fourth of the high school graduates in the United States have had no American History. The average student entering the Uni-

versity of Chicago has had only two and one-half units in the social studies. Since History and Civics are usually taught in the upper classes, those students leaving school early have no training in the fundamental principles of our government. This is particularly true of the curriculum in Commercial High Schools where one-fourth of the business men and women are now trained.

After a short discussion of Mr. Flemming's paper by the members of the section, Mr. Howard White of the Political Science Department of the University spoke on the subject "Some Tendencies in Recent Civics Texts". Mr. White spoke of the tendency to include economic, political and social problems into one course giving a broader implication to the term Civics. The number of text-books published in 1922 shows the importance of this movement.

The speaker called attention to several recent books, telling something of the amount of space devoted to social, political and economic material. Among the group, one by Munro and Ozanne entitled "Social Civics", was mentioned as meeting the needs of the present requirements.

Prof. Henry Johnson of Columbia University spoke to the Section for a few minutes relating some personal experiences in formulating ways and means of adequately teaching the principles of our government to adult immigrants.

Prof. Johnson's remarks closed the 1922 meeting of the Social Science Section.

Geography in the Interpretation of History

Bessie L. Ashton, University

The existence of an important relation between geography and history has been recognized for centuries. It was John Smith, of colonial fame, who said in his history of Virginia written three hundred years ago, "For as geography without history seemeth a carcasse without motion, so history without geography wandereth as a vagrant without certain habitation. He who studies the one without the other will understand neither. Who despises both should live like the mole under the earth". Herder, two centuries ago said, "Geography is the basis of history and history is nothing but the geography of times and nations set in motion." By some geography has been compared to a stage upon which the drama of life is enacted; others have called it the key that unlocks the pages of history. It is not a stage, that implies inertness and geography is alive and active, and it is not a universal key, but it is true that a mutual relation does exist and without a doubt the major share of the benefit derived from this kinship is enjoyed by history. Just as geography must search the records of geology to learn the secrets of the past for use in the interpretation of the present, so history must appeal to geography for aid in the solution of its problems.

The first important record of the realization of the relation between geography and history was made by Hippocrates about 400 B. C. when he

called attention to the effect of geographic environment on the character of peoples. Aristotle attempted to explain the superiority of the Greeks by attributing it to their geographic position, and Strabo discussed the relation between topography, climate, and civilization. These are undoubtedly the most important among ancient contributors to the subject. Between these early writers and those of the present day the name of Ritter, to whom is ascribed the beginning of scientific anthropogeography, stands out most prominently.

Of modern writers Miss Ellen C. Semple, who is quite as much an historian as a geographer, is a pioneer in the field of historiography. Her book on "Influence of Geographic Environment" is rich in historical allusions while at the same time making evident the operation of geographic principles. "American History and its Geographic Conditions" by the same author is even more usable in that its scope is more limited and the treatment less detailed. It is an invaluable asset to the library of the teacher of geography or American history. The direct style, simple phraseology, and concreteness make it equally suitable for use by high school students.

Co-ordinate with the publications just mentioned are those of Albert Perry Brigham whose "Geographic Influences in American History," though less complete than Miss Semple's book of similar name, resembles it in subject matter and simplicity of treatment. It is interesting to note that the two books appeared in the same year. Mr. Brigham's book, like Miss Semple's, fills a real need and is worthy a place on the shelf in every high school library. Both of these authors are frequent contributors to scientific magazines, many of their valuable articles appearing in the Journal of Geography.

The subject of historical geography is presented ably, but somewhat differently, by James Fairgrieve, an Englishman, in "Geography and World Power". This book deals mostly with the Old World and shows clearly how the development of groups of people which we call nations has been directed by the various combinations of geographic factors. To use the author's own words the purpose of the book is "to show how the way in which man has come to be able to use more and more energy has been determined by distributions on the earth's surface."[1] For example, the early civilization of Egypt grew out of the protection offered by the surrounding desert; in Greece, it was the contact with the sea which exerted the greatest influence; while in the development of Russia the forest has been the controlling factor.

Another contribution that should be mentioned here because of the originality shown in the selection and organization of material and in the point of view is "Human Geography" by Brunhes, a Frenchman. In this carefully prepared volume of more than six hundred pages, the phenomena of human activity form the starting point and center of the whole theme. There is little that is theoretical in the book, its purpose being more to present problems for solution than to theorize concerning them. While it is more geographical than historical, it contains numerous allusions to history, his examples being chiefly those dealing with the *work* of man. According to the author history "is coming more and more to rest upon the careful investigation of social and economic facts. * * * It is in fact work and the direct consequences of work which form the true connection between geography and history."[2]

Though it has long been recognized that history must depend upon geography for the interpretation of much of its content, it is surprising how few historians make any considerable use of the available fund of geographical knowledge in their literature. Students of historical geography must peruse many pages of history, as a rule, to discover some essential fact for which they are searching. An exception to the rule is found in the works of Frederick Turner who shows a keen appreciation of the importance of geographic

1 Page 9.
2 Page 544.

factors. Many of the accounts given by early travelers and old settlers are good, and a fruitful source of geographic material in historical literature is the State Historical Society publications. For the study of Illinois the following will be found worth while: "The Far West" by Flagg in Thwaites' Early Western Travels; "The Settlement of Illinois" by Boggess; "Early Society in Southern Illinois" by Patterson in the Fergus Historical Series, No 14, and "Sectional Forces in the History of Illinois" by Greene in Transactions of the Illinois State Historical Society for 1903.

Geographers do not claim that all historical events are determined by geographic conditions, some are clearly the outcome of social, political, or ethnic forces, but it is undoubtedly true that the major part of history has been directed to a greater or less degree by factors that are geographical. *Location* is significant both to geographly and history, so much so that "the atlas habit" is invaluable to students of either. It is so essential a part of geography that some uninformed people even today believe that it is the sum total of geography. The realization of the importance in history is evident in the frequent use of maps for the purpose of location, but merely to point out a given place on the map is not sufficient, its situation should be analyzed. It may be zonal position, which is the leading factor in determining climate, accessibility to the sea or other navigable waters, or relation to other lands, as the case may be, that is most significant.

Accessibility to *navigable waters* is a factor of far reaching significance. We are brought face to face with the influence of the open sea first in the voyages of the norsemen who were forced to become mariners by the unattractive and unfruitful homeland, and who received encouragement to do so by the abundant yield of fish from the bordering waters. Enticed farther and farther from home by the island stepping-stones they first ravaged the shores of the British Isles, then later wandered westward until they touched the bleak coast of North America. In the same way Portugal's outlook across the Atlantic determined that it should be that country that should tread the supposedly dangerous pathway southward along the coast of Africa, cross the equator in the fiery zone, and continue until the southernmost point was rounded on the way to the Indies. Britain's insular position on the main ocean highway at the margin of the most highly developed continent resulted in extensive exploration and colonization by that country and is today responsible for its supremacy on the sea,—a position it is likely to maintain indefinitely.

The influence of *inland waters* is less conspicuous, but none the less marked. The rivers of Canada formed the highway by which the French penetrated to the heart of the continent and, by the scattering of population which resulted, contributed to the downfall of the French in America. The importance of the St. Lawrence as a highway is reflected in the linear counties of Quebec which abut upon the river with a width of some nine to twenty miles or so and extend back for a distance of nearly two hundred miles,—a relic of the policy which allowed to each settler frontage on the river, which was the universal highway and conferred valuable fishing rights, and a share in each kind of land,—tidal marshes next the river for hay, alluvial bottom lands above high water mark for field crops and garden, the rolling bluff-bound upland for pasture, and the wooded hills beyond for lumber and cordwood.

Along the Atlantic Coastal Plain the rivers were navigable to the Fall Line and gave to the settlers of tidewater Virginia a ready made highway by which they could receive their supplies and ship their tobacco directly from their own docks. The isolation of the plantation, partly due to the lack of roads which were made unnecessary by the numerous waterways, built up an aristocracy with the planter as the "lord of the manor",—a situation quite the reverse of that found in New England where rivers were good for little but waterpower, the improvement of roads was a vital question, and democracy pre-

vailed. In interior United States the importance of the rivers was even more marked. It was by river that many of the settlers entered the country, and it was by river that the easiest communication with the outside world could be kept up. The desperate effort made by the inhabitants of the Ohio valley to maintain open navigation on the Mississippi attests the value set upon that waterway by those benefited by it.

Topography is another of the very important geographic influences in history, events both great and small being profoundly affected by it. Mountain barriers, by confining areas of rather limited extent and protecting them from outside aggression, aided materially in the development of early civilization. It is easy to see how the Appalachian Mountains held the English colonists to the Atlantic seaboard until by strengthening numbers they gained momentum enough to break their bonds and pour through the passes to take possession of the waiting country beyond.

Many times the topographic cause is of a local nature as the sand and gravel terrace which was chosen as the site of Cincinnati and the bluffs at Quebec. As these minor features are not easy to recognize by the ordinary physical map I would recommend for this purpose the use of the topographic maps of the United States Geological Survey. A study of Springfield, Mass., map reveals the city on the alluvial terrace of the Connecticut river, above flood waters and surrounded by the plain which offered ease of tillage and of communication. The frequent use of the suffix "field" in names of towns in similar situations indicates the early settlers appreciation of their advantages for agriculture in a region elsewhere adverse to that industry.

In military operations topography has played a part equally as important. The tendency of armies to make use of linear valleys is testified by the Champlain Lowland, that oft-traveled route of the French and English during the days of early conflict, and the same can be said of the Shenandoah Valley during the Civil War. Minor features are often of vital consequence in determining the progress of operations and the final outcome of the particular engagement. The importance of the gaps in the Blue Ridge Mountains through which entrance or exit to the Shenandoah Valley is easy, the commanding positions of Cemetery Ridge and Little Round Top on the Gettysburg battlefield and of Lookout Mountain and Missionary Ridge near Chattanooga, and the difficulties of Grant in his operations before Vicksburg can be read easily from the topographic maps.

An example of the influence of topography in political history is found in the case of Virginia when the rugged non-slave-holding western portion took its stand with the North against the more nearly level slave-holding eastern part. A similar response is seen in Tennessee where politics are said to differ with topography in the three physiographic regions of the State.

Of all geographic factors *climate* is the most significant because of its varied and far reaching consequences. It dictates not only what we shall eat and wear, the type of shelter we shall have and, to a great extent, our activities, but there seems strong grounds for the belief that it exerts a marked influence on man, physiologically and psychologically. Students of tropical diseases point out that the high heat and humidity found in the rainy tropics cause anemia and aggravate digestive diseases. Evidence goes to show, also, that the people of polar regions are rendered mentally inert by the extreme cold and are subject to pulmonary affections, while the intense light of the arid regions, such as Mexico, results in high nervous and emotional tension, quite the reverse of the stolid, almost pessimistic, attitude of the inhabitants of cloud covered lands like Scotland and Norway. As human energy and efficiency are limited by mental and physical states, it is reasonable to believe that the development of the human race in its various phases of social, industrial, and political activity has been profoundly affected by climatic conditions.

A study of maps showing the geographical location of the highest centers of civilization, past and present, is most illuminating. The first thing to note is the fact that there has been a migration of these centers from the southern margins of the north temperate zone into higher latitudes, probably because milder temperatures were more favorable when peoples were more primitive and less able to cope with rigorous winters. One condition exists, however, throughout the entire area, that is the necessity of regular work because of the alternating productive and non-productive seasons. In Egypt the overflow of the Nile, in Mesopotamia the winter rain, and, in higher latitudes, the warmer summer season marks the time when work, systematically and intelligently applied to the land, brings sufficient reward to tide over the unfavorable season when production is impossible. Such a condition calls for forethought, and, with thought, comes invention and progress. In "Civilization and Climate", Ellsworth Huntington shows the close correspondence between the geographical distribution of human energy on the basis of climate and the distribution of civilization. He contends that the zone of cyclonic storms with its sudden frequent, and severe changes of temperature keeps humanity on the tiptoe, as it were, physically and mentally, the results in the optimum of human energy and progress.

Changes in the amount of rainfall have registered significant historical events. A decrease may spell disaster, as was the case of Kansas in the eighties when thousands who had been induced to come during the preceding years of heavier rainfall were forced to leave or face starvation during the series of dry years that followed. Population maps for 1880, 1890, and 1900 tell the story. Longer periods of increasing drouth may be responsible for great migrations of people. The progressive desiccation of the Asiatic steppes is said to be responsible for the successive invasions of Mongol hordes into Europe during the thirteenth century.

Familiar examples of a more direct response to climate are found in the history of America where conditions of climate have contributed largely toward determining the status of agriculture and consequently the political outlook of the people.

Exploration, settlement, and the development of industry are closely related to the distribution of *mineral resources.* The need of salt held the early settlers near the Atlantic coast, and located the trans-Appalachian settlements around the salt "licks", or springs. When the salt springs along the Kanawha, and in Kentucky and central New York were discovered the settlement of the Ohio valley became possible.

Deposits of the precious metals tended to limit the extent of Spanish America and led to the exploitation rather than the development of the colonies, —a policy which eventually brought disastrous consequences. The discovery of gold brought a great rush of people to California and inaugurated a series of events of incalculable importance. It created a new frontier and added a state to the Union in less than two years. By increasing the world output of gold it increased prices and brought apparent prosperity, speculation, and the panic of 1857 in its wake. It led to steamboats on the Pacific to hasten communication and gave an impetus to railway development. It started Chinese immigration and stimulated immigration from Europe. It led to development in the adjoining states and helped to sustain the North in the Civil War. Population and prosperity built upon the presence of precious metals alone, however, are likely to be temporary, as the history of Nevada shows, the fluctuations in population from 62,000 in 1880 to 42,335 in 1900, 82,000 in 1910, and 77,000 in 1920 being due chiefly to the exhaustion of old mines or to the opening of new ones.

On the other hand abundant and accessible deposits of coal and iron as the bases of industrial development give the possessor decided superiority over those countries not equally blessed. The industrial supremacy of Great

Britain was due to favorable distribution of these resources and the same may be said of the United States. Some have gone so far as to say that the strength of a nation can be measured by the presence and use of iron and energy resources,—coal, petroleum, and waterpower.

In the foregoing pages we have a glimpse of the nature of the relation between geography and history, have recalled some of the literature involving their relation, and have touched upon a few historical events to show how geographic factors aid in their interpretation. No effort has been made to exhaust any phase of the subject, the treatment was intended to be mainly suggestive. Now our chief concern is the practical application of this knowledge in preparing or conducting the everyday lessons. How is the teacher of high school history to make use of geography in the interpretation of history? Just how much attention shall be given to the geographic phase, what material shall be used, and by what methods are the ends to be accomplished?

As I am not a teacher of history and am not now in close touch with high school work, these questions can be answered more ably, I am sure, by other members of this group who are so engaged. In my opinion there is no universal rule which can be followed by every teacher at all times and under all circumstances. Each must fit the method to the special condition found. The size of classes, the academic preparation of the pupils, the time given to history and geography, respectively, in the school, the school equipment, and the amount of money available with which to make new purchases are some of the considerations which will help to decide the method most suitable in any particular case.

In the first place the teacher of history must have the requisite knowledge of the fundamentals of geography, without it inviting fields of investigation must remain untouched. It would be interesting to know what per cent of the teachers of history in high schools are sufficiently informed on this subject. I think it probable that there are teachers of history who have never had a course in college geographly, and perhaps not even a thorough high school course.

The next essential is a firm conviction of the value of geography in the study of history and enthusiasm enough to stand by those convictions and carry them through to completion. Given these three a *way* will be found. In history I believe the problem method with considerable emphasis on the reasons for things is sound. Exercises consisting of questions, and suggestions for map study or map making to be used by the pupil in the preparation of the lesson are worth while. Much of the pupil's time will be saved by careful assignments. By this I do not mean assignments so detailed that opportunity for individual initiative is eliminated, but clear and purposeful ones. This is especially applicable to the use of the topographic maps already mentioned, for their use would have little value unless studied with a definite end in view. Teachers of American history will find the Physiographic diagram of the united States by Prof. Lobeck of the University of Wisconsin very helpful.[3]

The subject of reference readings introduces a series of questions which this paper must leave unanswered. What literature do you find most valuable? How do you make use of this material? Do you find that pupils having a knowledge of geographic principles show a quicker and clearer grasp of the subject than those who have not? These and questions concerning the type of outline map you use, what you expect these maps to show when completed, how you assign this work, and what proportions of the time you find practical to devote to this phase of the work in your classes in history suggest themselves as profitable subjects for discussion. Let us have an expression from the experience of those who, because of their daily labors in the laboratory of high school history, are competent to speak.

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3 Address Wisconsin Geographic Press, Madison, Wis.

Geography in the Interpretation of History

Miss Ashton has furnished us an inspiration and set us an ideal toward which it seems both possible and profitable to work. I think it was her idea that I suggest some sort of working plan which might if carried out, strengthen the geographic interest in history and thereby make both subjects more intelligible.

It must be true that not all teachers of history realize the importance of the geographic background for history work, or if they do realize it they have neither the equipment nor the time to secure results that are quite satisfactory. Students come to us with so little knowledge of geography and I imagine the college instructor thinks we send them on to him equally deficient—that it is sometimes quite discouraging. But really there is no use complaining about the things the previous worker has not done. We have a real live laboratory in which to experiment, and with earnest efforts many of the defects can be remedied, and history taught besides.

The amount of time given to the geography of history may depend upon the instructor's preparation, and his interest in the subject, or perhaps on the time allowed for the course. For instance, if the course in American History covers one semester only, much less geographic work must be done, than if a whole year's time is allowed for the same subject.

I have made no investigation of conditions in the high schools of Illinois to learn how the work in these two subjects, history and its geographic background, is being done, but I simply offer, for what it may be worth, a few suggestions concerning the way in which we, in Champaign High School, are trying to bring about this correlation.

First do not assume that your students know very much geography; you will be disappointed if you do. And right at the beginning of the term, those first few days, when many are without texts, and new students are arriving who have not received the assignments, is a capital time to check up on their knowledge of the geography that is going to be required for that particular course. My first class period in American history is always a map drill in place geography of the United States, and the American Continent. I am always surprised when I find some one who can locate the Hudson River and the Potomac River correctly. Generally they have the most hazy notions about the position of places that are vitally essential to a proper understanding of the early period of the study. Fifteen minutes of real snappy drill, repeated several times during the first week or two usually produces good results, both in arousing interest and in creating a foundation upon which the history story can be built.

Good wall maps are essential for this kind of drill and to get the best results there should be both political and relief maps on a scale large enough to be easily seen from all parts of the class room. The blackboard outline maps are probably the best asset. The same map can be made to show such a variety of things and after a washing, like the old fashioned slate, it is ready for a new story. Places and countries look so different on these black and white surfaces. The Black Sea which is so easy to find on a map that is colored blue, and properly labelled, is scarcely recognisable among the white lines on the black foundation.

A drill based upon this outline map prepares for the seat work which follows or precedes, as you choose, the study of the historical material.

Next in importance to the work from wall maps is the students own constructive map work. We use map manuals rather than the loose leaf maps for regular work, because they furnish us a good collection bound in convenient form. It is not necessary to follow the manual slavishly. Select the maps that will best show the ideas you want to teach. Use your originality and make your map books tell the story you want them to tell.

Any extras which you do not use serve as excellent material for a map quiz in time of review. Most of our map book work is done as a class exercise, in a regular laboratory period, where each individual's work is supervised and he can be questioned while he is at work. In this way many errors are avoided. It also minimized the danger of map work becoming mechanical copying. Approximately one class period a week is allowed for this work.

A favorite exercise of mine, as a means of summarizing a definite period of work, is to take a section of the blackboard and let it represent a certain geographic area and then locate with some degree of accuracy certain points, which may be rivers, lakes, mountains, or towns. The idea here is the relative position only. Probably I can illustrate best what I mean by an exercise following the story of Burgoyne's Campaign.

A student was sent to the board and given these instructions which were executed one at a time as dictated:

Draw the Hudson River.
Draw the Mohawk River.
Draw Lake Champlain.
Draw St. Lawrence River.
Draw Lake Ontario.

Then, locate: New York City, Montreal, Fort Ticonderoga, Fort Crown Point, Fort Stanwix, Fort Edward, Saratoga, Bennington. From this would-be map, the story of Burgoyne's attempted capture of New York could be reviewed rapidly, indicating the places as they were mentioned.

There are many places where Miss Ashton's suggestion of a laboratory exercise on topographic maps could be profitably used. The only difficulty there would be the fact that the quadrangles as published by the geological survey cover only a small area. They would aid in a detailed study of some specific topic. For instance, the relation of the Potomac River, and the Shenandoah Valley to the location of Harper's Ferry would be much better understood, if studied from a good topographic map.

We are not, as yet, supplied with the material for this sort of new information, but it suggests future possibilities in the work of making the subject of geography a more vital factor in the interpretation of history.

A Discussion of Miss Ashton's Paper—Geography in the Interpretation of History

By Miss Ora B. Cole

Miss Ashton did not give me a copy of her paper before I came here, nor did I know what line her thought would take. Most of the things I thought of saying have been said. I shall add but one thing from my own experience about the method of teaching geography in history. Miss Ashton has told you that she has never taught history and I hastened to add that I have never taught geography except for one short term.

When I went to the University of Chicago to study, my mind was a blank in both history and geography. All the geography I had been subjected to was of the old unrelated type and I am sure Miss Ashton will agree that geography is only a related science, as history must be associated with economics and sociology and politics and geography in order to live. (Of course you will see that I studied geography in the Victorian age.) At the University, I took all the history I could find and left sciences severely alone—but when I finished, I found that I knew quite a little geography. I can only judge other

minds by my own. A related subject of that type will stick in my mind when it is related—and all my observation of my pupils tends to maintain my own mental processes.

Consequently, I have been more and more sure that associations have to be established to make geography live. And there seems to me to be two ways to do that—a poor way, of formal teaching of places and boundaries, and an informal method of association that seems to work better. The formal way is to assign maps to be copied—and I have done much of this in my day. We cover the walls with brilliant maps,—it is a very showy idea—but the pupils learn very little because they are only copying names. We also read maps in class, each pupil having his own textbook map before him. There seems to be more gain here, for the brighter pupils help the slower ones and there is some progress in the mere mechanical reading of a map. But the results are small. We may develop map sense—and of course, there is such a thing—but there is little real feeling or idea of the raction of gography on history.

But I do feel that we get results when we draw down the big general map and pointing out places, fix stories upon them. In the first place, the very colors of the map are a relief after the dull colors of the schoolroom and the eye rests on the map involuntarily. I can not tell when I first began to know what maps were—my eyes followed them as the lecturer talked and one day, that map was mine. And besides there is something very splendid and Napoleonic in the pointer of the teacher—which sweeps aside boundaries and unrolls centuries of work with a mighty whisk.

After all, rivers and mountains are very little by themselves. We go to the Rockies for aesthetic and scientific reasons, but we seek the Swiss Alps for many more reasons. Hang legend on your aweinspiring peak and thousands will come where hundreds visited it before. Why else do so many of our most intellectual people go to Europe every summer? It is the human element making geography live.

I read a little poem yesterday—by a young man at Northwestern, Harold Lewis Cook. It was a poem about Dunsany—

> "I suspect you of having very large pockets
> Full of geography,
> Bulging with time."

I suspect that the teacher needs to have her mind full of legends to hang on every bush and then her pupils will learn geography.

Problems of Democracy as a Course for Seniors

C. A. Harper, University

The general practice at present is to either offer a year's course in U. S. history, a half year of history and civics, or history and economics. This last year, which should be the capstone of the whole social science course, is apt to be largely devoted to the history of the United States, with the large emphasis on the periods up to, and including reconstruction, with a very hasty summary of the history since that time, plus some elementary but technical rules of economics, or a study of our constitution, courts, etc. Most of the agitation for the introduction of more social science into our schools, and for a reorganization of the social science curriculum, has come as a result of the realization of the great and startling fact that intelligence is not keeping abreast of the increasing complexity of modern life. This great point is the source of the philosophic pessimism of today.

Division of labor, and a high degree of specialization, in place of bringing with it the greater happiness which the interdependence and interrelation of man should bring, has tended to make of the individual a lifeless cog in the great machine, without an understanding of the problems which the modern world brings.

There should be some place in our high schools where students are to be introduced to some of the great unsolved problems in which society in general, and our nation in particular, is interested, and will be called upon to solve. These problems can not be adequately presented to pupils less mature than high school seniors. These seniors will be to a great extent, the leaders of the community in which they live. The high school seniors of today will tomorrow contribute greatly to the solution of problems which today baffle us. Plainly our traditional senior social science does not even state these great problems with this idea in mind. The Committee of Eight on History and Education for Citizenship, suggested a course for the twelfth grade, which should include some of the basic principles of economics, sociology and political science stated in elementary terms, but should consist mainly of the study of definite, present-day problems, illustrating these principles.

A little investigation would supply us with some tentative problems. The question is, what are some of the fundamental unsolved issues and problems of today? I have attempted to find ten or twelve of the most important of these by (1) an analysis of certain studies, which have been made along this line, (2) an analysis of the few texts which have been written on the subject, (3) a study of what out-standing thinkers would include in such a course, (4) a study of current magazines, (5) an analysis of the opinion of certain successful business men, college graduates and others, and (6) a study of the content of books published on such problems in the past four years.

I will summarize some of the results of this study; not that it is thoroly scientific or exhaustive enough to have much value, but merely to suggest a certain list of problems which might serve tentatively as the content of such a course. I desire to secure a list of ten very important unsolved problems which should serve as a basis of a year's work by high school seniors. Very few studies have been made along this line. The most serviceable were made by Dr. Earnest Horn of Iowa.

He asked a number of teachers of economics, sociology and political science in the University of Iowa to mention ten of the greatest problems of today and name a book in which each was best discussed. These books were then analyzed by graduate students. From four studies of this nature, I listed sixteen topics appearing most frequently:

1. Capital and labor
2. Pauperism.
3. Rural credits.
4. Regulation of public utilities
5. Taxation
6. Crime and its punishment.
7. Transportation
8. Socialism
9. Pure food
10. Civil service reform
11. Child labor
12. Conservatism.
13. Public sanitation
14. Interstate commerce
15. Life insurance
16. The negro

I have next taken the 1921 issues of the *Outlook, Literary Digest, Independent, American, Current Opinion, Nation* and *Review of Reviews*. The articles tabulated were those in which the author seemed convinced that he was treating a great problem which the American people were called upon to face. The following twelve articles are given in the order of their frequency:

1. Capital and labor
2. Socialism
3. Internationalism
4. Business organization and trusts
5. Poverty
6. Crime
7. Conservation
8. Social insurance
9. Immigration and Americanization
10. Taxation

I next secured lists from a number of business men and college graduate students in social science. I requested each individual to list, in order of their importance, ten great problems of modern democracy. From this list the ten highest were:

1. Capital and labor
2. Business organization and trusts
3. Socialism
4. Poverty
5. Political control—graft, etc.
6. Taxation
7. Crime
8. Public sanitation
9. Unemployment
10. Adult education thru the press

(From these lists I noted that college men show a more marked sociological viewpoint than business men.)

I next selected forty topics, having greatest frequentcy, from seven lists, and classified them in order of the number of books, pamphlets, and documents written about them from Jan. 1918 to June 1921. This list was secured from the U. S. Catalog of Publications, published by H. G. Wilson and Co. Digests of these books were consulted in case of doubt as to their contents. Such a list would give a composite viewpoint of a large number of specialists. The ten topics, having the greatest number of publications to their credit are:

1. Labor and capital
2. Socialism
3. Internationalism
4. Poverty
5. Trusts and business organization
6. Problems of political control
7. Social insurance
8. Conservation
9. Crime
10. Public education.

Another list was made from an analysis of the few texts written on the subject:

Hughes—*Problems of Modern Democracy*
Burch & Patterson—*Problems in American Democracy*
Monroe & Ozane—*Social Civics*
Towne—*Social Problems*
Tuffs—*Real Business of Living*

From the survey of some such lists, one could not go far off as to the matter of content.

I was rather interested in an analysis of a course of this nature to determine the percentage of materials to fall in each branch of the social sciences. Such a determination is of course impossible, for few of the problems of today can be said to be purely a matter of economics, sociology, or political science. However, from an examination of a proposed reading list based on ten great problems, I concluded that approximately 30%-35% could be called economics, 25%-30% sociology, 12%-18% history, 10%-12% political science and 5%-7% education and psychology.

From experimentation with such a course, I find that a problem such as the ones suggested, could not be adequately handled in less than three to four weeks of five recitation periods per week. This would make the year's course consist of some ten problems.

Briefly, the method which might be pursued may be divided into three steps: (1) stating the problem, (2) surveying it historically and (3) considering possible solutions. In stating the problem, evidence should be collected to show that the problem really exists. Each problem must be shown to be crucial. The necessity of a solution must be brought vividly before the mind of the pupil. The second step is to survey the problem historically. After all, this is the only kind of history that amounts to much. History must furnish the raw material for all the social sciences. In the light of this research, the third step is attempted. How the problem came into existence, and what expediences have been attempted, will furnish valuable clues as to a solution. In considering possible solutions, the idea is not to champion any one of them, or to let prejudice enter in, in any way. In fact, one of the main aims of such a course, is to develop openmindedness.

The weight of authority, which backs each proposed solution, should be considered. In this way the student will gain some insight into the personality of our great thinkers and intellectual pioneers. Every effort must be made by the teacher to keep from rationalizing or forcing on the class some ready-made conclusion. A class conclusion must be rigorously avoided, and premature decisions on the part of the students religiously discouraged.

In handling this sort of course, we feel the need of ample library facilities. However, wise selection of books—and the use of a few good periodicals, will enable any library to finance this end of the subject. I believe that it would be a mistake to put a text in the hands of the pupils for three reasons. (1) There has been as yet no adequate text published, (2) there is valuable training in collecting and criticizing material and (3) we must beware of a single viewpoint. The text-book becomes a god and independent thinking is hampered.

At the meeting of the Committee of Eight in Chicago February 28, 1919, a statement of the aims of history teaching was adopted. In this report we find the following: "Historical training frees the mind from the tramels of time and place, substituting the idea of social development and change for the instinctive notion of a static social world, performing in this respect, a service in education analogous to that performed by biology for organic nature. (b) It tends to produce open mindedness which mitigates native prejudices, and permits truth to gain recognition. (c) It induces patient enquiry for the purpose of disclosing the facts of a given situation before passing judgment. (d) It gives some grasp upon the method of investigation and tests of accuracy. (e) It developes that form of judgment which deals with the shifting and conditional relations of men in society, supplementing the scientific judgment which arises from the study of animate and inanimate nature and mathematics. (f) It yields the high moral and ethical concepts of loyalty to principles and institutions by revealing the cost at which the elements of civilization have been secured for us.

When we reflect on these aims in regard to a course on Problems of Modern Democracy, we see that it seems particularly adapted to a realization of all of them.

The Handling of Backward Students in the Social Sciences of the Decatur High School

In the past few years there has been a great influx of young people into the high schools. In our school, and I presume the same is true of other schools, many of these students who found their way into the high school were unable to do the work according to the standard of the existing curriculum. There was much dissatisfaction on the part of the teachers of the department. Class room work was unsatisfactory, bright students were being retarded, slow students accelerated because the teachers were devoting an over amount of time to them.

In our efforts to bring these students up to the minimum standards of the course of study various devices were used. A study hour was created and placed on the daily program. Teachers supervising the study of backward students often found that they were unable to read intelligently. The socialized recitation was inaugurated, new classes were organized such as sociology or psychology, and teachers in charge of program making were directed to put some of the ever-failing students into this new class. The subject matter was to be of such nature that it was hoped the student might find himself. Various other experiments were tried and still we had an appreciable number of students who could not or did not do the work.

Finally, the teachers demanded that something be done. Various methods of solution were offered. Some proposed that they be placed in classes of a different nature; for example, the vocational classes; others wanted segregation.

Near the end of last year the principal asked that teachers of the social sciences provide him with a report of all failing students. In this report the credit marks, attitude, and as far as could be determined, the cause of failure were to be given. During the vacation these grades with the grades of all other subjects, which the student was taking; attendance, including tardies; and statements from other teachers concerning the attitude of these same students were tabulated for each individual reported. At the opening of school this fall teachers in charge of making programs for these failing students were directed to put them into a class designated as a citizenship class instead of enrolling them in any of the regular history classes. As a means of obtaining facts regarding the ability of students to read a test was given as soon as the regular classes were organized in the fall. Van Wagenan's History Scale A reading test was given to all classes of the social sciences. The results of each individual was recorded and placed on file. This data was not considered final but in most cases the teachers' judgment of reading ability was confirmed. Mental tests were given in a few instances. Credit marks earned, in social studies as well as other subjects were ascertained. The results of these investigations along with the judgment of teachers constituted the criteria for further regrouping of students. At the beginning of the second six weeks period twenty-seven students out of four hundred twenty studying Modern European History were withdrawn and two new classes formed. One half the period of fifty minutes is given to study; the other half to recitation. An attempt is made to adapt the subject matter to the different ability groups, namely, the amount of work done, quality of the work, and credit received. The rate of progress is determined by the ability of the group and credit will be given for work done.

The citizenship class organized at the beginning of school enrolled some twenty or more boys and girls who for various reasons had made little or no progress in school. Our first aim was to form more personal acquaintances with them in order that we might have an appreciative understanding of their attainments in life, and, if possible, to inspire within them confidence in their ability to realize their ambitions. Much depends on mental attitude. Few people live to experience the satisfaction of doing some one thing well. Let the problem be of such nature that the student may experience the joy of achievement. By far the most important factor entering into the whole scheme is the teacher and in a large measure, the secret of her success in handling students is in possessing "good nerves, great patience, and a genuine love for them." Whenever individual differences are to be considered in the teaching of a subject the teacher must do it. The social sciences are no exception to this truth, for whatever of life or value they have in the development of boys and girls as members of society the teacher is responsible. The teacher of this class enjoys the satisfaction of having accomplished the first objective, namely, that of inspiring confidence. With her abiding sympathy and con-

tagious enthusiasm, she has so warmed the hearts of these boys and girls that they have not only been willing to participate but individuals have volunteered their services in the performance of civic undertakings in the school community.

Hill's "Community Civics" is used as the basis of class room work. Our aim at this point is not only to create a desire on the part of the individual to participate in all civic activities of his community but to acquaint him with such facts concerning the organization of that community as will enable him to contribute to society the highest type of citizenship of which he is capable. No formal assignments are made from the text requiring preparation outside of the classroom. The text is used as a basis for each civic project undertaken. For example chapter twenty was studied in class when preparation was under way for the school election. Lists of questions based on the reading which applied to the project served for written work. The text has extensive bibliographies composed of books which not only illustrate the topic in question but prove exceedingly interesting to the members of the class. Much reading on the part of the students is encouraged, no formal checking in the way of book reports is required. Filing cards containing the student's name, the title of the book, the name of the author, and the number of pages read are required to determine approximately the amount of reading done by each student. Books which the students enjoy are brought to class and advertised. Reports of reading are often made in class. Personal conferences are held with each student once in every six-weeks period and reports of the reading made. This work has proved interesting and has done much to break the ice and remove the chill of the class room atmosphere.

With the organization of the class, as a Parliamentary body new waves of confidence—thought were set in motion. Johnny Jones quite naturally acquired a new importance as he arose to his feet no longer Johnny but Mr. Jones. Of course much more can be accomplished by a Mr. Jones than could ever be expected of just Johnny. Is it any wonder then that soon the teacher-pupil convention disappeared and there appeared instead a new organization dignified by the proud title of "The Better Citizen's Club"? Soon a program was announced featuring a discussion on the topic "The modern home is better than the home of fifty years ago". Of this program the principal, honorary member of the club, is reported to have said, "The discussion was better than some which I have heard in other classes". The socialized recitation is effected by means of this parliamentary organization.

Certain civic projects have been undertaken in which the members of this class have actively participated. One project is an attempt to solve the tardy problem. A large map of the city of Decatur has been placed in the high school office. Black and yellow headed tacks representing individuals who are tardy are placed on this map. The work is being done by a member of this class under the direction of the assistant principal.

Another project was a general school election held November 7th. The preparation for the election was directed by a committee of teachers of the department. This class was placed in charge of one election precinct. The details of the election were made to coincide with those of the regular election as far as it seemed advisable. The preparation for the election was as follows:

(1) A brief study of party organization was made. A map of Macon County was used and a survey of the Government units made. The corresponding units of party organization was explained. The students secured the names of the various committeemen and learned something of their duties. From a map they learned the number of the precinct in which they live and later located the polling place. (2) State and County offices to which officers were to be elected were studied in a general way. The Congressional and Senatorial districts were pointed out on the map. Here the student learned why

we choose congressmen-at-large, and what is meant by cumulative voting. (3) A brief study of the nominations made at the Primary election was next considered. Specimen ballots of the Primary were used in class. (4) Specimen ballots of the general election were next procured and a study made. The arrangement of the ballot regarding political parties and the candidates were pointed out and those of local interest were given more attention. Students were asked to visit Party headquarters and secure any literature, pictures, or other desirable information regarding these candidates. The terms "split ticket" and "straight ticket" were explained and information given on how to mark a ballot including cumulative voting. (5) Election officials were next studied. The students were made familiar with the method of appointment and duties of these officers. The entire school was arranged into ten precincts, the population of each approximating one hundred students. The qualification of voters was determined and the student body registered. Election materials were made by the students who were chosen as election officrs. Registrs, pool lists, tally sheets, ballot boxes, boothes, etc., were completed. Specimen ballots were purchased in sufficient number for the entire school.

The officers of election chosen from the Citizenship Class handled themselves surprisingly well. The procedure of voting on election day was conducted with much dignity and sincerity on their part. The oath taken by the Judges and clerks, was to them a solemn duty. Irregularities were less noticeable, perhaps, than at some of the regular polling places of the city. These students with others came at the end of the day, canvassed the ballots, sealed them properly, and reported the returns.

The work as carried on by these student-officers compared quite favorably with the other groups of student-officers in charge of other precincts. Five ballots were marked incorrectly out of a total of one hundred cast at this polling place. Since the primary purpose of the election was to train for more intelligent voting we felt that this group had gained the desired results. Of course they received more intensive training; even then not all were capable of acting as leaders. One girl, clerk of the election, had to be replaced because she could not tally the votes correctly.

Weak students who at the beginning of the year gave evidence of progress were retained in the regular classes. During the conference hour each day, the teacher may supervise the study of these students or complete unfinished work due to absence. Individual differences are again recognized in our system of weighted credits. For example; a student who does only the minimum amount of work may receive a grade of E which means four credit hours, while a student doing more than the maximum requirement may receive a grade of A which means six credit hours.

I have in a brief way explained some of the methods which we are using with backward students in the Decatur High School. Grouping students according to individual differences in our school is largely in the experimental stage. The teachers of the department are agreed that the segregation made thus far has proved beneficial to all. Bright students, too often a neglected factor in school, have been stimulated to greater effort. As to the progress of backward students to the extent that they have improved in other subjects, we can hardly determine in so short a period.

The boys and girls are the core of the social science courses. They are the ones to be taught rather than the subject in hand. If we as teachers are to yield our greatest share in the socialization of these students—in the building up of fair mindedness, sympathy, and breadth of view—other than training as teachers of the social sciences, we must know the boys and girls placed under our direction. To understand something of the individual differences makes possible various avenues of approach by which they may be reached, thus enabling them as more intelligent and patriotic citizens to live together well.

A Fundamental Aim for All the Social Studies

A Discussion of the Marshall Report on Social Studies in the High School

D. F. Fleming

Three years ago, in November 1919, a Commission was appointed by the Association of Collegiate Schools of Business to study the correlation of secondary and collegiate education, with particular reference to secondary education. The Commission included representatives of the Association of Secondary School Principals, the American Federation of Labor, and the National Industrial Conference Board (an organization of employers) and was headed by Dean L. C. Marshall of the University of Chicago. The Commission published its recommendations in the Journal of Political Economy for February, 1922.

I. *The Purpose of The Social Studies.*

The Commission seems to have felt that a fundamental statement of purpose was necessary that would justify social study in the large. To its mind the real aim of all social study teaching is "to give the student a real appreciation of the functioning structure of modern society". This central motive runs through all parts of the entire report. The same idea is perhaps more or less in the minds of most people who teach one of the social studies. It seems, at any rate, to form a common principle that all teachers of history, economics, civics or sociology might agree upon.

Heretofore history teachers have been busy in urging the teaching of the maximum amount of history; economics teachers have been intent upon extending the instruction in their study downward; civics teachers have favored a greater range of instruction in political and civic affairs; and in striving for a greater quantitative study of our own subject it seems likely that we have introduced material in all courses that did not do much to help the student to really understand the society that he is to live in. And yet is not that the social purpose of all teaching?

The goal of our teaching in the social studies surely should be to give the student the clearest possible comprehension of how our political, economic and social institutions have been built up and of how they work. It is not enough to give the student an elaborate background of previous human experience. He must have some clear views of the way our institutions are functioning now if he is to adjust himself efficiently to the machinery he finds himself working in. Are we now giving the rank and file of the pupils who pass through our schools any real appreciation of the functioning structure of modern society?

II. *Previous Efforts to Determine the Content and Scope of Social Science Teaching*

Before further consideration of this question let us take a rapid view of the previous efforts which have been made to determine the content and scope of social science teaching.

The Madison Report of 1893 made to the Committee of Ten of the National Education Association is the first modern attempt to determine what should be taught. It recommended an eight year course of instruction in history beginning at about the fifth grade and closing with a semester of civics.

The Committee of Seven of the American Historical Association, reporting in 1898 did not go much beyond the Madison Report. While conceding that there should probably be a separate study of civil government they

held that "a great deal of what is called civil government can best be studied as a part of history" and while the student "should come to a realization of the nature of the problems in the industrial world about him" they did not think that economic or social facts should be emphasized at the expense of governmental or political facts".

The 1908 report of the Committee of Five of the American Political Science Association looked definitely toward breaking the monopoly of history. It urged the teaching of government in the four upper grades, beginning with local government first, and stood for a closing semester of civics in the fourth year of the high school.

The 1908 report of the Committee of Eight of the American Historical Association, and the 1910 report of the Committee of Five of the same organigation marked no fundamental change in the attitude of the historians. It did display willingness to admit more civics to the curriculum, put more emphasis on modern history, and change the content of the history courses.

The 1916 report of the American Political Science Association advocated the teaching of fundamental civic virtues as applied to home school and neighborhood from the first grade up and stood for civics instruction through the junior high school and ending with a full year of social science exclusively of history in the senior high school.

In 1916 a Committee on the Reorganization of Secondary Education of the N. E. A. recommended a junior high school course in social science including geography, European history, American history and civics, separated from each other, however, in the main. A similar cycle for the senior high school was submitted.

Moved in part by the rising tide of community civics the American Historical Association appointed a Committee on History and Education for Citizenship which has made two reports and is still at work. It has so far blocked out a full twelve year curriculum divided into four periods of three years each. The main thread of its outlines is historical, but there is a continual emphasis on political and economic developments as well as a tendency to introduce commercial and world geography.

A Committee of the American Sociological Society is also at work, as is a Joint Commission representing The American Historical Association, The American Economics Association, The Association of Collegiate Schools of Business, the American Sociological Society, The American Political Science Association and The National Council of Teachers of Geography. All the organizations of social science teachers seem to have come to a realization of some necessity for united action in formulating the social science curriculum.

III. *The Present Status of Social Science in the High Schools.*

In the judgment of the Commission the actual position of social studies in secondary schools falls far short of the unsatisfactory proposals which have been made for their introduction and teaching. The Commission finds from studying the entrance offerings of University of Chicago students that the average student who enters college has had only two and one-half units of social science as a whole, instead of the four units of history designed for him. Of this two and one-half units history comprises more than two units. Our students depend for their social study training on a chronological presentation of history beginning with ancient times and topped off in the senior year with American history, civics and a little economics. Worse still, armies of high school pupils drop out after a year or two with only a smattering of ancient and medieval history as their social study training received in high school. Roughly one-fourth of those graduating have had no American History in high school, and in colleges requiring no American History may get a degree with no study of the history of their country after leaving the grades. The

Commission feels that "the truth of the matter is that history has not been able to command the respect and approval of the secondary school constituency as an effective instrument for explaining the society in which we live, and the other social sciences have not met the crisis precipitated by the failure of history".

In the commercial courses in our high schools the situation is even worse. Commercial pupils constitute at least one-fourth of all high school pupils, ten times as many as there are agricultural students, and nearly twice as many as there are students in all our colleges. Our business men and women are being trained in our high schools, and the Commission is convinced that the bulk of training for business which will be done in this country in this generation will be done there. What social study training will this business class have? Social studies are now so few in the commercial course that they can hardly be located prior to the senior year. Our commercial high schools are still mainly the "clerk mills" that they were when they were taken over from the business college. Even the Federal Board for Vocational Education prescribes a commercial course which offers a maximum social training of one unit in the junior high school and one in the senior high school.

What view of this situation shall we take? The Commission is convinced that "democracy cannot as a long run story, support a plan for an educational system devoted primarily to the production of clerical and other routine help. As a social investment we cannot afford to have training so narrow. We must have a system of training which will give our future managers a real appreciation of the social environment in which they will operate and an understanding of business from the functional point of view". (Not merely a knowlegde of some business routine.)

IV. *The Point of Attack.*

In scanning the pupils' school life for an effective place to introduce further social studies, the Commission decided that the junior high school is the strategic point for an attack at the present time. The Commission finds several reasons for believing that the junior high school is on the point of firmly establishing itself in our school system. It is convinced:

1. That with the lengthening of the average period of school attendance per year a six year elementary course is sufficient.

2. That high pressure in the curriculum of the four year high school will drive some subjects down into the present inflated grade school course of study.

3. That the influence of the professional schools is strongly exerted to secure adequately prepared men at an earlier age.

4. That our present 8-4 organization is not in harmony with the educational experience of other countries.

5. That the debate over the psychological justification of the junior high school has turned in its favor.

The Commission therefore proposes a junior high school program in social studies.

V. *Principles Underlying the Report.*

In preparing the proposed junior high school curriculum the Commission has intended to keep the following considerations for principles (among others) in mind.

1. That all material introduced should aid in "giving our youth an awareness of what it means to live together in organized society, an appreciation of how we do live together, and an understanding of the conditions precedent to

living together well, to the end that our youth may develop those ideals, abilities, and tendencies to act which are essential to effective participation in our society". This is the broad purpose of the proposed curriculum.

2. That the question should not be "how to put the social studies into our curricula", but "how to organize our curricula around social objectives". This Commission believes "that the social studies should be the backbone of secondary education, and with which all other studies and school activities should be clearly articulated".

3. That any program of social studies which hopes to be successful must be drawn with consideration for vocational needs. This suggests no conflict of interests. Men work together in organized society. Vocational training will be greatly improved—even as a 'money making' matter for the individual—by the right kind of a social study backbone.

4. That the program of social study which recognizes the heavy withdrawals of students as they become older seems likely to accomplish the greatest good for the greatest number. Trial has been made in these recommendations for both continuity and progression.

5. That an effective program of social studies will be organized in terms of the psychology of learning. A serious effort has been made to conform to experience in this respect.

A Summary View of the Proposed Junior High School Program in Social Studies Submitted by a Commission of the Association of Collegiate Schools of Business

Seventh Grade

1. Geographic basis of (physical environment with relation to) United States development
2. Social science survey (types of social organization)
   (a) Simple industry and simple society
   (b) The transforming effects of scientific knowledge

Eighth Grade

1. The opening of the world to the use of man
2. Vocational survey, the individual's place in our social organization (presented in functional terms so that it may contribute to an understanding of our type of social organization)

Ninth Grade

1. The history of the United States (presented with "citizenship material" occupying the center of attention)
2. Principles of social organization (economic, political, social)
   (In all three grades other studies correlated so far as may be practicable with the social study material.)

A Detailed View of the Work of the Seventh Grade

The work of this grade sets out consciously to give our youth an awareness of what it means to live together in organized society, an appreciation of how we do live together, and an understanding of the conditions precedent to living together well."

The work in geographic bases of (physical environment with relation to) United States development is designed

1. To bring into an organic whole the preceding work in history, civics and geography in such a way as to
2. Show the importance of physical environment with respect to conditions precedent to living together well and to
3. Prepare the way, in terms of principles, for the work of the next two grades and to
4. Give the student who can go no farther a significant contribution to his "appreciation of how we live together and understanding of the conditions precedent to living together well."

The social science survey of types of social organization is designed

1. To bring into an organic whole the preceding work in history, civics, and geography in such a way as to prepare the way, in terms of principles, for the work of the next two grades.
2. To lay a comparative basis for the later more careful survey of the evolutionary development of the functioning social structure.
3. To give the student who can go no further a significant contribution to his "awareness of what it means to live together in organized society, appreciation of how we do live together and understanding of the conditions precedent to living together well."

The suggested method of presenting this social science survey material is as follows:

1. Present a series of snapshots of simple types of social organization such as

   The life of Neolithic man
   The life of the Iroquois
   The life of nomads
   Life in a medieval manor
   Life in a medieval town
   Life in modern secluded mountain district
   Life in a frontier mining camp

   in which the student can see how such matters as education, religion, health, social control, economic activities, etc., (these are only samples) were cared for and can begin to see wherein our ways of caring for such matters are different, if different.

   This comparative study should be directed toward bringing out certain concepts, of which the following may be taken as samples (they are only samples): self sufficiency vs. interdependence; customary vs. competitive methods; non-exchange vs. exchange society; non-industrial vs. industrial society; the shifting emphasis in social control; the modern co-operation of specialists—all with idea of leading the student to "generalize" his knowledge and with the further idea of preparing him for the study of "principles" in the ninth grade.

2. The latter part of the survey is to be devoted to showing the contribution of knowledge "to our living together *well*". This should be no mere threadbare account of the industrial revolution; it should be an account of the transforming effects of science on our ways of living together. Notice that the way has been prepared by the student's work in science, if science is offered in this grade.

VII. *An Attempt at Correlation Up Through College.*

The Commission had been directed to see what correlation could be arranged between high school and college work. Its further recommendations therefore suggested a proper sequence of work up through the senior high school and to the college. Taking up the task at that point the School of Commerce and Administration of the University of Chicago has accepted in general principle the following basic principles upon which to build its curriculum. (Journal of Political Economy, June, 1922.)

1. That the curriculum should seek to secure as much unity and correlation as may be educationally justifiable in the entire secondary and collegiate program of the student.

2. That it should seek training in terms of functions rather than in terms of detailed subject matter. (Requirements have been for some time already on this basis.)

3. That the Bachelor's degree be conferred on the basis of attainment rather than in terms of years spent, or majors taken. Graduation will depend upon:

(a) A minimum residence requirement of six quarters.
(b) Certain specific performances—thesis, examinations, etc.
(c) Certain minimum requirements in the outstanding functional fields. These are eight in number and wonderfully suggestive of the possibilities of giving training for definite functions rather than for chance application.
(d) A concentration or specialization requirement.
(e) A practice or contact work requirement.
(f) A distribution requirement.

The significance of this plan for us will be seen in the possibility of a student bringing to bear effective high school training in such a manner as to satisfy all these requirements and shorten his course at the same time. Entrance requirements are consciously drawn to secure a considerable concentration and continuity in certain secondary school subjects. Future students may have an opportunity to build a cumulative structure of functioning knowledge from the elementary school up through college to the time of application in his life work.

VIII. *Is a Social Science Concept at Hand?*

Whatever else we may say of these offerings we must admit breadth of purpose in the Commission's effort to unite the hitherto free-lance branches of Social Science into a unified curriculum. Signs are not wanting, too, of a similar realization of a need for unity among other social science workers. The senior high school curriculum suggested by the American Political Science Association, which was discussed in this section last November approached the one before us in breadth. Though a course in civics, approximately one-fifth of the material outlined is material commonly taught under the name Sociology, and about one-fourth of all the topics offered are orthodox subjects in Economics. Some attention is given to geographic factors also, and a considerable amount of incidental history teaching is implied throughout.

These evidences of effort to agree upon fundamentals point out, it is suggested, the best hope of making social science study more effective. All social science teachers and many other thoughtful people have felt since the Great War, that instruction in the business of living together well is of supreme importance. More people than ever before have realized that all the people must

be better taught the foundations and workings of our institutions. The program laid down by The Collegiate Schools of Business would seem to be a long step toward the accomplishment of these ends. It aims at nothing less than the putting of effective social training back of, and in, all training for business as well as for the professions. If teachers of language can learn new tongues in a short space of time, and present Spanish and French to their classes in the place of German, surely social study teachers can afford to see the identity of their favorite phase of the subject somewhat merged (in the lower schools especially) into a unified social science training that will more effectively direct the lives of our people.

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